Grand·Prix

INTERNATIONAL

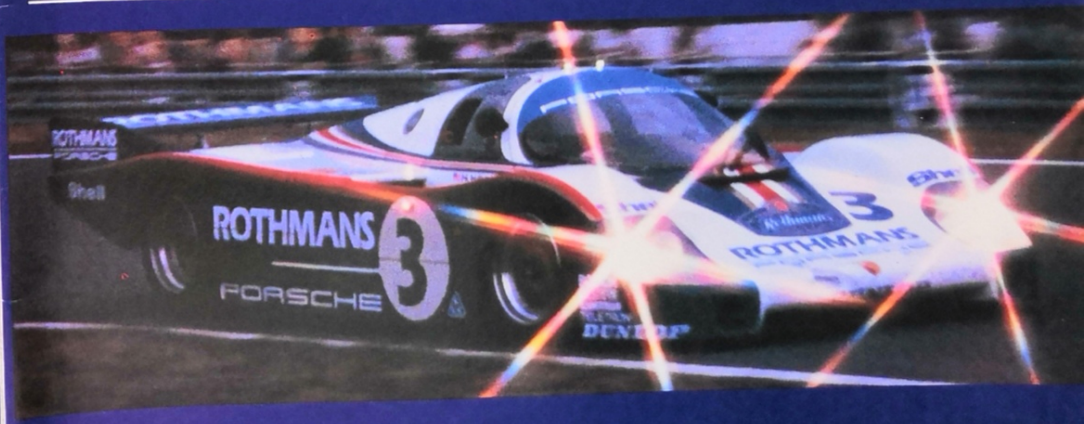
Marlboro British Grand Prix

NIKI LAUDA OK-TURBOS KO

N°52 · JULY 22 TH 1982 · GREAT BRITAIN £ 1,25 · CANADA 3 $50 · IRL £ 1,40

Le Mans 24 gruelling hours.
Speeds up to 221 mph.
The biggest challenge in endurance sports car racing.
And in this, their Le Mans debut, Rothmans Porsche swept the board.
The brilliant new Rothmans Porsche 956 : 1st, 2nd and 3rd.
The Rothmans Porsche team.
Bringing a new dimension to Rothmans commitment to the world of motorsport.

Le Mans 1982. One team sweeps the board



Leaders in Action

Rothmans
ROTHMANS
PORSCHE

We're often asked what we get out of motor racing.

Below, you see a particularly fine example.

It may not look much to you but it speaks volumes to our scientists down at Sunbury.

Pure gold, in fact, if you know what you're looking for.

Because the fastest way to find out how an oil will perform is by putting it in a racing engine.

Then put it under the microscope (or, to be precise, the plasma torch), and it starts to yield up its secrets.

The first thing our boffins look for is the state of the additive elements.

(In laymen's terms, the ingredients added to the oil to improve its performance).

Are they still there in the right concentrations?

Or have they been used up in the slog round the circuit?

After that, they start looking for what shouldn't be there.

Like trace elements of iron, copper, aluminium and chromium.

All of them tell-tale signs of the wear and tear an engine suffers under stress conditions.

No single sample, of course, is conclusive proof of anything.

So our scientists analyse upwards of 5,000 samples every year.

Not just from racing cars but from every kind of vehicle under the sun.

What we learn from all this goes into improving our lubricants.

Could we get by without motor racing?

To us, it's still one of the best tests of an oil under stress conditions.

Our men in white coats care not who's lost or won.

But only how the oil's performed.

BP

After every race, our drivers are expected to provide a specimen.

'This has got to be one of the best books on motor-racing around. The illustrations are first-rate and so is the text. I loved it.'

MARIO ANDRETTI

The definitive chronicle of the sport

This book should be on the shelves of every motor racing enthusiast

From the 63 mph of the first Grand Prix to the 200 mph of the Indianapolis speedway, from the playboy drivers of the Edwardian era to the hardened professionals of today, and from a series of isolated races in Western Europe to a multimillion pound championship spanning four continents – here is the whole fascinating story.

GRAND PRIX

THE CARS • THE DRIVERS • THE CIRCUITS

David Hodges, Doug Nye, Nigel Roebuck

'A magnificent book, of the kind to grace any coffee table, *Grand Prix* sets out to be "a celebration of Grand Prix motor racing", and succeeds entirely. The widely known experience and skill of the authors is combined with very fine original colour drawings by five artists, and with imaginative design in a very large format.

Hodges sets the ball rolling by re-telling the story of the development of Grand Prix racing from the earliest days. The tale is continued in the words of Nye and Roebuck which follow, and which make up the bulk of the book.

The long historical introduction is illustrated by delightful colour drawings by Jim Robins and includes short pen portraits of the great marques of the early days. These are themselves illustrated by charming monochrome drawings by Jim Bamber. Nye introduces the modern cars with a short article describing the technical development of chassis, engines, tyres and so on. The modern marques with which he deals specifically are Alfa Romeo, Arrows, BRM, Brabham, Cooper, Coyote, Eagle, Ensign, Ferrari, Hesketh, Honda, Ligier, Lola, Lotus, McLaren, March, Matra, Penske, Porsche, Renault, Shadow, Surtees, Tyrrell, Vel's Parnelli, Williams and Wolf.

Far and away the best drawings in the entire book are the sketches which illustrate the section on the drivers, by Craig Warwick. Roebuck has had to select 26 great drivers for inclusion, and his choice has necessarily been personal. The 26 are Amon, Andretti, Ascari, Brabham, Brooks, Clark, Fangio, Fittipaldi, Foyt, Gurney, Hawthorn, Graham Hill, Phil Hill, Hunt, Ickx, Jones, Lauda, Moss, Peterson, Pironi, Regazzoni, Rindt, Scheckter, Stewart, Surtees and Villeneuve. Roebuck effectively brings out the major achievements of each man together with an illuminating insight into his personality. The section on the circuits is also Roebuck's, the author enlivening his short histories with personal impressions. The circuits are Buenos Aires, Interlagos, Kyalami, Long Beach, Zolder, Monaco, Jarama, Paul Ricard, Dijon, Brands Hatch, Silverstone, Hockenheim, Osterreichring, Zandvoort, Imola, Monza, Montreal, Watkins Glen and Indianapolis, and they are illustrated by Harry Clow.

...Both for the writing and the artwork, the price is astonishing value, and we recommend *Grand Prix* very highly.'

– taken from *Autosport*, October 1981

265 x 340mm; 224 pages; with more than 350 specially commissioned illustrations – more than 200 of them in full colour

£19.50

ORDER FORM

To: Michael Joseph Ltd, Dept RT/GP, 52 BLOOMSBURY STREET, LONDON, WC1

Please supply ..... copy/ies of GRAND PRIX @ £19.50 (POST FREE)

I enclose cheque/P.O. payable to Michael Joseph Ltd for £.....

Please debit my ACCESS/BARCLAYCARD no .....

Name .....

Address .....

.....

If you do not wish to deface this magazine simply send payment with a covering note

MICHAEL JOSEPH

FROM FORMULA 1 TO FAMILY CAR- THEY GO WITH CHAMPION.

Like the manufacturers of most standard family cars, the men who make racing cars put their faith in Champion technology. And with reason - every Formula 1 championship has been won on Champion Spark Plugs for the last three years!

And what Champion experts learn from motorsport competition is engineered into the Champion plugs you fit in your car.

That's why the manufacturers of Europe's best-selling vehicles insist on fitting Champion Spark Plugs right in the factory. And why Champions are recommended for refitting by practically all car makers.

So for your regular tune-up, take a tip from the men who make the most famous racing and family cars.
Go with Champion!

CHAMPION

The right choice
for every make of car.

Marlboro
Marlboro
PM INC
Marlboro
20 CLASS A CIGARETTES
STILL
£1
LOW TO MIDDLE TAR As defined by H.M. Govt. DANGER. H.M. Govt. Health Departments' WARNING: THINK ABOUT THE HEALTH RISKS BEFORE SMOKING

Put your foot down in the new BMW 635 CSi and you won't find it wanting.

It can, after all, accelerate from 0-60 in 7.4 seconds and top 142 mph.*

But for BMW *how* a car performs is a far greater priority than sheer out and out performance.

Which is why the BMW coupés have undergone a number of significant changes.

There's a totally redesigned suspension system. (Arguably the most advanced suspension in the world.)

And, on the 635 CSi, Michelin TRX extra-low profile tyres.

Which means it can be driven hard into a corner and still keep a perfect line.

For safer high-speed driving there are BMW's unique two stage headlamp reflectors for brighter low-beam lighting.

And the most advanced braking system in the world: ABS. A system that allows a driver to brake and steer at the same time without the wheels locking.

Then there's a redesigned 3.5 litre engine which, while offering faster acceleration and a higher top speed, is actually 9.4% *more* economical.

And a redesigned cockpit containing the latest BMW electronic technology to aid the driver:

An active check control to monitor seven key functions.

A service interval indicator which adjusts service intervals to the way you drive.

A fuel consumption indicator.

Even an on-board computer.

Ironically, about the only thing we haven't given the new 6 Series, be it the 628 CSi or the 635 CSi, is the one thing ordinary motor manufacturers are only too eager to give their 'new models'.

A facelift.

But on this our designers were adamant.

They could possibly make the cars work better. But look better?

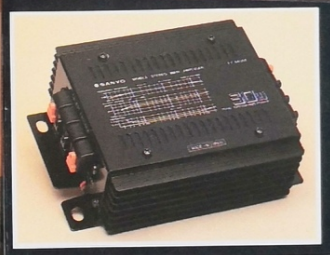
Hardly!

THE ULTIMATE DRIVING MACHINE

THE NEW BMW 6 SERIES. FROM £17,890 FOR THE 628 CSi TO £22,950 FOR THE 635 CSi. PRICES CORRECT AT TIME OF GOING TO PRESS. INCLUDE CAR TAX AND VAT BUT NOT DELIVERY OR NUMBER PLATES. INCLUSIVE DELIVERY CHARGE INCORPORATING BMW EMERGENCY SERVICE AND INITIAL SERVICES £160 + VAT.
*Manufacturer's figures. FUEL CONSUMPTION FIGURES. URBAN CYCLE: 14.0 mpg. 56mph: 29.2mpg. 75mph: 22.1mpg.

FOR A NEW BMW 6 SERIES INFORMATION FILE, PLEASE WRITE TO: BMW INFORMATION SERVICE, P.O. BOX 46, HOUNSLOW, MIDDLESEX, OR TELEPHONE: 01-897 6665. (LITERATURE REQUESTS ONLY). FOR TAX-FREE SALES, SCARBA [illegible]

DOLBY SYSTEM
"Dolby" and the double D symbol are trademarks of Dolby Laboratories.



FALL IN LOVE WITH YOUR CAR AGAIN.

The Sanyo FT280LE stereo radio and Dolby AMSS cassette player, powered by FTA630E amplifier. With 4-band tuner, soft touch presets for FM and MW, digital quartz clock/tuning indicator, and metal, CRO2 and normal tape select.

One example from the new 1982 Sanyo in-car entertainment range. We could blind you with science by telling you that the PLL frequency synthesizer tuner has ATQC, SM and ASMC FM optimiser, or that the Dolby cassette deck features, a tape salad protector. But we think you will be even more interested in the superb sound quality, reliability, and value for money, with the amplifier included in the all-in price of around £249.95

SEE SANYO, THEN DECIDE

THE NEW 1982 RANGE OF IN-CAR EQUIPMENT STARTS AROUND AS LITTLE AS £29.95. FOR FURTHER DETAILS CONTACT YOUR NEAREST SANYO IN-CAR DEALER.

SANYO

THE LONGINES STYLE

Longines named sole Grand Prix timekeeper. To time events to 1/1000th sec.

For the next three years, Longines will be sole official timekeeper of Formula One world championships – from Kyalami in 1982 to Las Vegas in 1984. The appointment was made by FISA and FOCA. Longines is also the choice of the Ferrari and Renault racing stables. On the track, on your wrist, look to Longines for the last word in time.

The Longines-Ferrari Collection. Ultra-slim quartz movement, centre second, calendar. Sapphire glass. Water-resistant. 2-toned model with white, gilt or black dial. Hers: Ref. 4888. His: Ref. 4870.

Longines. Quartz made in Switzerland.

Ferrari

LONGINES
OFFICIAL TIMEKEEPER OF
THE FERRARI RACING TEAM

LONGINES

A Matter of Style

The test we quote in the headline went on to say that the "Jaguar XJS-H.E. provides a blend of spectacular performance, blissful refinement and subtle comfort that no other car in the world can equal."

Which you may think says it all: however, we would like to add a fact or two.

First, the engine. 5.3 litres, V12, 300 BHP with a maximum speed of 155 mph, and acclaimed as the finest production engine anywhere in the world.

Yet the XJS-H.E. delivers fuel economy comparable to many smaller engined cars. (On a run from Munich to Calais Motor Magazine's test car achieved an outstanding 21.9 mpg at an average running speed of 62.6 mph.)*

This remarkable achievement is made possible by the adoption of the unique 'fireball' cylinder head, combined with an advanced digital fuel injection system which precisely meters the amount of fuel required second by second.

The suspension system is so smooth and the sound insulation so complete that you can carry on a civilised conversation at speeds almost embarrassingly higher than the legal limit.

"THIS JAGUAR MUST BE THE FINEST MEANS YET DEVISED IN WHICH TO TRAVEL BY ROAD."

MOTOR 18.7.81

And naturally, in the best Jaguar tradition, we haven't forgotten creature comforts.

Connolly leather seating and trim, burr elm veneer dashboard and door cappings, deep pile carpeting, air-conditioning, and a four-speaker stereo/radio cassette system, together with many other features combine to give an unequalled level of interior refinement.

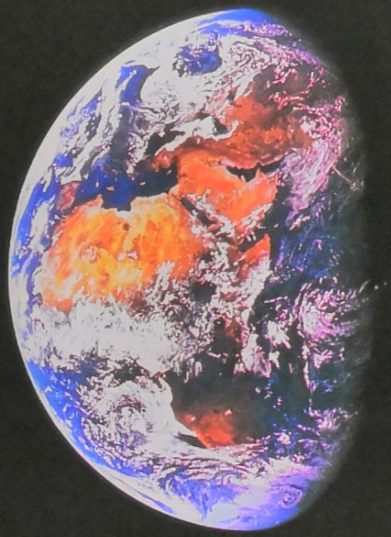
The overwhelming verdict of the motoring press is that the XJS-H.E. is the finest Grand Touring car money can buy.

We'd like to add that the few rivals for that title can cost up to twice as much as the Jaguar's price of £19708.

SUPERCAT. THE NEW XJS H.E.

Price, based upon manufacturer's RRP and correct at time of going to press, includes seat belts, car tax and VAT. (Delivery, road tax and number plates extra). Official fuel consumption figures: constant 56 mph 27.1 mpg (10.4 L/100 km); constant 75 mph 22.5 mpg (12.6 L/100 km); urban cycle 15.6 mpg (18.1 L/100 km); *Issue dated 18th July 1981.

JAGUAR CARS
In pursuit of perfection.



'The earth was made so vast that you may travel its open spaces.'

One of the biggest fleets in the world flying to 37 countries worldwide. Welcome to our world.

saudia
SAUDI ARABIAN AIRLINES Member of IATA

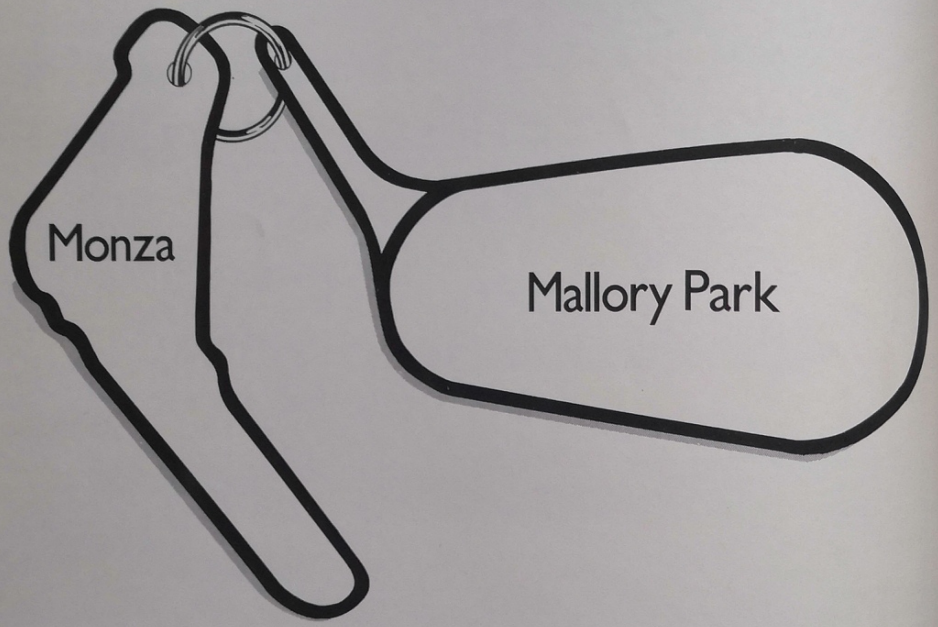
"The car can claim the greatest load space of any estate in its class, where the rivals include the Volvo 265, Ford Granada, Vauxhall Carlton, Citroen CX and Datsun 280, and the lowest fuel consumption. I would add that it is probably the best of the bunch to drive."

THE TIMES
FRIDAY APRIL 23 1982

PEUGEOT 505
TAKE PRIDE IN PRECISION

THE 505 ESTATE AND FAMILY ESTATE. 3 MODEL OPTIONS. For the address of your nearest dealer ring Teledata (01-200 0200). Nato, Diplomatic and personal export inquiries Peugeot Park Lane, 63/67 Park Lane, London W1Y 3TE. Tel: 01-499 5533. Official Government fuel consumption figures. 505GL. Urban cycle: 25 mpg (11.3L/100 km); constant 56 mph: 38.7 mpg (7.3L/100 km); constant 75 mph: 29.4 mpg (9.6L/100 km). Price, correct at time of going to press, excludes number plates, delivery and road fund licence.

FROM MONZA TO MALLORY
FROM 1000KMS (173 LAPS) TO 47.25 MILES (35 LAPS)
FROM GROUP C TO F3
FROM START TO FINISH



— Electronic Ignition from Lucas

Both the recent Monza 1000 Kms World Endurance Championship of Makes and the Mallory Park Marlboro British F3 races were won by cars relying on the power, performance and reliability of Lucas electronic ignition.

But with over twenty years at the top you'd expect the latest electronic ignition from Lucas to be more than just competitive – whatever or wherever the race.

Racing and Competitions Dept.
Lucas Electrical Limited
Oakenshaw Road, Shirley, Solihull
West Midlands B90 4QY

Lucas Electrical

IN THIS ISSUE

PAGE 14
PADDOCK NOTES FROM BRANDS HATCH

PAGE 16
NIKI LAUDA: THE FOX IN THE HATCH

The Austrian ace had it all his own way, the fates and his McLaren conspiring to outdo the turbos on the tricky Brands Hatch circuit. Mr. Computer was back in business, but as Keith Botsford shows, the man is anything but.

PAGE 20
PRACTICE

Keke Rosberg's Williams was outrageous in its domination on Friday; it kept pole on Saturday despite a strong rush by the Brabham-BMW.

Centre fold insert unipart McLaren poster

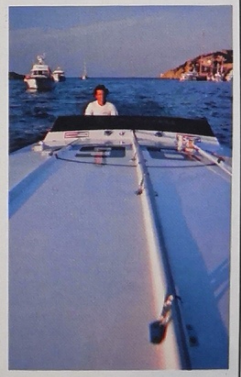
N°53 (FRANCE) WILL BE ON SALE ON 29, 1982

Grand Prix international

PAGE 22
THE RACE
With Rosberg doomed from the start, Patrese stalled and was rammed by Arnux and Piquet soon retiring, it was a mere formality for Niki Lauda to impose himself on the two Ferraris of Pironi and Tambay: but not until Warwick's startling Toleman gave up the ghost.

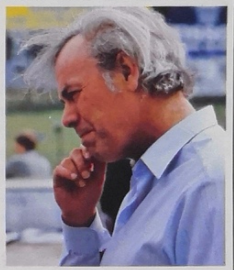
PAGE 26
RACE STATISTICS AND LAP CHART

PAGE 28
ELIO DE ANGELIS: WEALTHY TALENT WASTED ?



Mike Doodson gives us the essential Elio, the young Italian driver who is undervalued, not over-liked and also hugely rich. Passion and money sometimes head in opposite directions and Elio would like to be a driver like any other. And one who wins grands prix.

PAGE 32
THE COSWORTH AND ITS CREATOR



Derek Gardner, one-time Tyrrell designer, concludes the dialogue begun in our last issue with Keith Duckworth, the brilliant creator of the Cosworth DFV. In 15 years it has won 149 races; number 150 cannot be far away.

PAGE 36
POSTCARD FROM BRANDS HATCH

PAGE 38
TECHNIQUES: FERRARI BACK AT THE PEAK
Giorgio Piola explains how the new Ferrari fore-and-aft gearbox should be an improvement on their traditional transversely-mounted box. As usual, the drawings show it all.

PAGE 40
THE GRAND PRIX IN PICTURES

PAGE 60
EXTRA, EXTRA

Didier Braillon, Jeff Hutchinson and Mike Doodson got it straight from the lips of those unlucky heroes of the weekend: the Toleman-Hart team, Keke Rosberg and team Brabham.

PAGE 64
NELSON'S COLUMN

PAGE 65
COCKPITS

Giorgio Piola and Didier Braillon put a collective magnifying glass to each of the grand prix's cars.

GRAND PRIX PUBLICATIONS Ltd 6. York Street, London W1H 1FA. Tel : 01.486.1277. Telex : 267509 LOGMAN G. PUBLISHER AND PUBLISHING DIRECTOR : Michel A. Konig. ASSOCIATE PUBLISHERS :Michel Hommel, Graham Rogers. INTERNATIONAL COORDINATION : Doreen Rogers. FINANCIAL CONTROLLER : Ivor Olley. ADVERTISING MANAGER : Robin Goodman. SUBSCRIPTIONS MANAGER : Sarah Redmond. CHIEF EDITOR : Keith Botsford. DEPUTY CHIEF EDITOR : Didier Braillon. EDITORIAL : Mike Doodson, Bob Constanduros, Giorgio Piola, Mario Luini, Michelle Dubosc, Xavier Chimits, Maurice Hamilton, Heinz Pruller, Jeff Hutchinson. COLUMNIST : Nelson Piquet. ARTISTIC DIRECTOR : Marc Tournaire. EDITORIAL SECRETARY : Regis Lacroix, Martine Fréour, Annie Nédelec. LAYOUT : Pascal Tournaire, Alain Convard, Jacques Gaiotti, Jean Bernard Blanchet. ILLUSTRATIONS : Serge Thomassian, Nicolas Géron, Didier Bussat, Jacques Poirier. PHOTOGRAPHERS : Bernard Asset, A + P. SAM, DPPI, First Line, Vandystadt, Cochin Jacques, Lionel Froissard, John Blakemore. Grand Prix International is published in five languages : English, French, Spanish, Italian, Dutch. PARIS HEADQUARTERS AND EDITORIAL : 7, rue de Lille, 75007 Paris, France. U.S.A. : Long Beach GRAND PRIX ASSOCIATION 110 W, 110 W Ocean Bvd, Long Beach CA 90802. ITALY : Editoriale Arbe s.r.l. via Arbe 10/20125 Milano, tél. : 02/60.08.26. SPAIN : po Castellana 169, Madrid 16. HOLLAND : Zuidgroep, Postbus 245.2501 CE The Hague. DISTRIBUTED BY : COMAG, Tavistock Road, West Drayton, Middlesex UB 77QE. Tel. : West Drayton 44055. Telex 8813787. Printed in Belgium by Hoorens Printing.
GPI published after each Formula One event (with 2 combined issues). Send change of address to : GRAND PRIX INTERNATIONAL. 110 W. Ocean Blvd, Suite A. LONG BEACH CA 90802. U.S.P.S. 597.330. First Class $72.00 Second Class $52.00.

The paddock in Brands Hatch

OPENING THE BRIEFS...

A drivers' briefing, as we all know, is a serious affair. It assembles various jail-house lawyers, assortments of malcontents, squads of new boys playing fag to the prefects, and a few — just a few — people who take the business seriously. An example of the level of careful thought involved was available at Brands Hatch on Friday. It was then, as the *cognoscenti* will know, that much was made of the question of refueling. Because that ingenious young man, Gordon Murray, proposed to put a little spice into life by bringing his cars into the pits and topping them up with fuel thus allowing them to run light from the start and also put on fresh tyres. Perfectly all right, said the clerk of the course. As long as the fuel is never exposed to the air. As there are always demurrers in any drivers' conclave, someone asked if the marshalls had inspected the equipment used for refueling. Yes, said the marshalls proudly, it is all in order. Then one joker asked to be able to view the equipment first hand. It was at this point, we regret to say, that Bernard Ecclestone began to unz...

UP MARKET AND DOWN...

The scene at the British Grand Prix was extraordinary: for the density of the huge crowd, for that rarity, British sunshine, and for the picturesque scenes which enliven British phlegm. Some of our continental colleagues report, without comment, the following scene: four impecabble *gentlemen anglais,* presumably dressed on Savile Row and equipped with Hilditch & Key shirts and shooting sticks from Mesars Sweent, Aideny & Brigg emerged from a vast BMW (bit down-market that, for England) and proceeded to uncork a vintage champagne into impeccably chilled glasses. They then sat down and imbibed. Next to them was a water tap, and to that water tap came: first, one of the great unwashed, who proceeded to do his teeth, and then another Brit who was watering his dog. Great sang-froid was shown on both sides. England, despite those who ask fags off HM in the sanctity of her bedchamber, remains England.

MEHL: "WE OPPOSE TREADED TIRES"

"We would have to go back to square one again," said Goodyear tyre chief Leo Mehl of the proposals for treaded tyres next year. — *"compounds, tearing, chunking, and so on, and they would create a very unstable situation in the corners."*

Mehl was adamant that Goodyear *"will never agree"* to treaded tyres for dry racing under current conditions, and he made it very clear he thought the tyre companies were being made the scapegoats in the political arguments over safety.

"The only thing that has been done in the past three to four years to slow down the cars was to reduce the height and width of the tyres for the 1981 season," he pointed out. *"They want treaded tyres in the name of safety, but what is being dont about ground effect, horsepower, the position of the driver in the car, and fuel cells that do not break in a relatively low-speed accident,"*? he asked.

Mehl pointed out that at Indianapolis this year, Rick Mears was seven miles an hour faster on exactly the same tyres which Goodyear supplied last year. Incidentally, he said Mears was clocked at 214 mph on the straights when he set an average lap speeds of 207 mph — which meant he was never under 200 mph right around the Brickyard.

Nelson Piquet put in four laps at Zandvoort on a heavily grooved experimental tyre, which showed serious wear immediately.

1983 - NEW YORK AND MOSCOW ?

A provisional 1983 calendar is circulating between FISA and the teams, and it includes street races in New York and Moscow. It lists 18 races, but two are expected to be dropped to keep to 16 for the championship, the first casualty probably being the season opener in Argentina Jan. 30, for both political and financial reasons.

The determination of Bernard Ecclestone to run a Grand Prix in New York is shown by the fact that the race is given three alternative dates — June 12, where it is the alternate with Montreal, or Sept. 25 or Oct. 9, Las Vegas being on the other date there.

The site would be the old 1940 World's Fair site in Queens, on the route from Kennedy Airport to Manhattan, and it would be a fourth U.S. race with Long Beach, Detroit and Las Vegas.

The Moscow event, for which we gave the circuit plan in the Dutch GP edition, is set for Aug. 21, but a Swiss G.P. at Dijon is given as an alternate if the race cannot be finalized.

There is no Spanish race, and the Belgian G.P. goes back to Spa-Francorchamps for the first time since 1970 on the newly modified track. We understand the formal agreement was signed in the week before the British race.

TAKING SILK

Patrick Burnham has been following the sport and pursuing his own unique art form for some four years. He uses soft materials like silk and satin to convey F.1 in hard, metallic colours. The fabrics give him a depth and richness which oil paint could not rival and he works in both embroidery and appliqué. The technique is complex and some parts of the cars are done in as many as six layers, with the picture being finished off with an air brush and tiny details being added by hand stitching.

APPEAL COURT IN ACTION

On the day after Brands Hatch, a FIA Tribunal of Appeal was sitting in Paris to hear three cases which, in effect, were attempts to reduce the size of turbo engines, and to consider the disqualifications of Piquet and Rosberg from first and second places in Rio, and of Gilles Villeneuve from third place in Long Beach.

The details:

— Max Mosley was presenting a case prepared by Keith Duckworth for Ken Tyrrell (and long held in reserve by FOCA) which Tyrrell lodged at Imola. It argues that a turbocharger, unlike a mechanically-driven supercharger, is a tiny turbine engine in addition to the usual 1,500 c.c. engine. Thus, the involved technical argument goes, the main engine should be reduced to 1,054 c.c.s to be equivalent to a conventional engine of 3,000 c.c.s. FOCA people have also suggested that as turbine engines are banned, turbochargers are thus illegal, but this argument is not being used. Tyrrell's protest is against Renault, Ferrari and Toleman-Hart (and not Brabham-BMW because, of course, they were not at Imola).

At Brands Hatch, the turbo teams involved were totally confident the argument would be rejected by the Court. *"Look"*, said Marco Piccinni pointing to Pironi's car. *"A Pratt and Whitney, no? No pistons, no conrods..."*

— The Federation Française du Sport Automobile is calling for all the "water tank" cars to be disqualified from the Brazilian G.P., and not just Piquet and Rosberg. The effect would be to raise Didier Pironi from eighth place to second, giving him six more points, but the court could also decide to overturn the disqualifications as arbitrary and thus restore first and second places.

— And Ferrari was continuing the claim that its double rear wing in Long Beach was a legal reading of the rules.

DRIVERS IN CONCLAVE

The drivers held their customary conclave at Brands Hatch. This time their concern was the new regulations on which they quite rightly thought they had the right to comment. What emerged, largely from the pen of Didier Pironi, was a series of recommendations, some of which agree with the proposals put forward by M. Balestre and FISA and some of which are in striking disagreement. One or two are entirely original and are obviously included to take into account the tragic accident in which Gilles Villeneuve met his untimely death.

In summary form, the drivers agreed to the proposed reduction in overall width (from 215 cm to 200), with the various reductions to wing sizes and overhang, with 225 liter fuel tanks, with the ban on six-wheelers and the elimination of skirts. On the question of treaded tyres, the drivers pointed out that supervising the new regulation might prove very difficult and likewise that tests carried out at Zandvoort by Nelson Piquet showed that this measure alone was unlikely , to reduce cornering speeds. They strongly insisted that there should be no changes in the rules for 1982 and likewise that any lower limit on weight would add to problems of safety. On the matter of fuel flow, the drivers proposed that *"fuel flow be limited to a number of cubic centimeters per minute slightly greater than the fuel flow in 1982, the 1982 flow to be measured on the car with the highest fuel consumption"*.

Original contributions included (1) a recommendation that the size of rear-view mirrors be redefined and (2) that the rear wing be raised to improve visibility to the rear. They also added a recommendation that a standard dismantable steering wheel be fitted to each car. The document was unanimously agreed, though not all drivers' signatures are appended and it is well known that no two drivers can really agree that black is black and white white.

TAMBAY REFUELED

Having arrived at Gatwick by helicopter and then done the Caledonian bit to Paris, a happy-looking Tambay took a moment to chat to our man on board. Apart from his obvious joy at having scored points for the great Sage of Maranello — *"It's so nice to be with a team that gives you support in human terms, not like working with McLaren where the object is to stimulate you with the equivalent of the cattle prod and the barb... Just look at what they've done and are doing to John Watson!"* — and his complaints at how hard it was, physically, to get back into true racing form (aching back, aching neck, headache, etc.), Patrick was particularly intrigued by the Brabham pit-stop gambit.

He was all for it *("After all, it's done all the time in Can-Am")* and yet obviously horrified by the consequences. *"I'm sure it would be terrific for television and for the crowds,"* he said, *"but it would mean redesigning all the pit-lanes to separate refueling from other activities... or else there could be a lot of dead journalists and some charred pretty girls. The tanks would be made lighter, everyone would get into the act and we'd have a whole new set of tricks and wheezes. Aren't exit and entry from the pits already dangerous enough ?"*

SPECTACLE, SUPPORT, SURPRISE

The British Grand Prix, which usually gives the season a handsome twist, was about spectacle, support and surprise. The fates were clearly having their little joke. With the weather, which conspired to be hot, balmy, sunlit and totally un-British, with the result, which rightly fell to that master prankster Herr Lauda himself and with the disappointments, particularly among the great, which were many, bitter and yet somehow relieved by the fortune which smiled on some of the less hallowed.

One disappointment there wasn't. There was neither acrimony nor controversy. The British Grand Prix is vastly traditional and it is run like a well-established boarding school of standing: the sun obeys, the boys turn out to cheer and the winner is a popular hero. Perhaps not the hero the home crowd love most, Watson, but still a hero they could all understand.

The spectacle was magnificent. Magnificent were the seven-mile queues that formed hours before the event, magnificent the sight of some 150,000 jamming infield, outfield, marquee and stand, magnificent the aerial displays, Harriers and even Concorde — showing how noisy it is when you're not riding in it — and only slightly less splendid, the race itself. Spectacle and human values are the ultimate saving of the sport, and we had plenty of both at Brands Hatch.

Such disappointments as there were fell most heavily on Keke Rosberg: blindly fast in practice, with his first win, he thought, in his pocket, with his father over from Finland to watch, a stupid starting problem put him back to the last row on the grid and nothing he did could save him. Then, with another spectacle in the making in the Brabham pits, a re-fueling stop at the halfway mark, world champion Piquet only lasted a few laps. There, the fates were truly having a joke at the joker's expense.

A tribute is due to Derek Warwick and Toleman. Nothing is harder than the climb from zero to mark one. To have been nothing and become something is an experience Frank Williams, among others, remembers. Warwick may have been disappointed not to finish, but the Toleman-Hart duo must have been overjoyed at a performance that promised so much. Maybe to spectacle, support and surprise, we should add success.

GPI

THE FOX IN THE HATCH

Niki is ordinarily one of the tersest of men. He no more wastes words than the average miser wastes money. He is a man for economy in all things: in motion as in words. And there are people who think of him as motor racing's version of the time-and-motion man who used to come into the office to tell us all how to do our work better. Brands Hatch was very much his race. And his meeting, The fox in the man was very much in evidence, so was the wile and the guile. He called his victory easy, but it's the business of artists to make the difficult look easy.

Those steely blue eyes were at their sharpest at Brands Hatch this week. They seemed to see everything with a particular clarity: the difficult past as well as the championship years, the terrible accident, the retirement from racing in disgust at politics and the loss of the pleasure that keeps him racing, the return... and even the future.

On Friday we had had a long talk on two subjects: coming back from the brink, as Niki had done after the horrors of the Nurburgring and the years spent with Enzo Ferrari. It as not cut-and-dried talk, it was just authentic Niki. As his race at Brands Hatch was the pure stuff. Made marvelously more possible by a McLaren that worked like a dream and gave him no problems at all — *"No problem, no problem"* used, after all, to be Niki's standard response to journalists for whom he had no particular affection.

On the disastrous past, he was acknowledging that the process of survival and recuperation is *"purely mental. You can train your body but you can't train your head. How do you train your head? You can only overcome the brakes in the head. The brakes are what slow you down in motor racing."* The brakes are made of fear, of course. But the truth is, that Niki has trained that head of his. He is made of equal parts of will and intelligence, and the will can make the mind bend and reshape itself.

Given, for instance, the formation of the grid in front of Niki last Sunday, one might have thought that his concerns would be obvious. Rosberg had won pole on Friday in such flamboyant style, in such an absolutely flat-out manner and with a speed that was not only visible and audible but perfectly plain in the risks he was taking, that his Williams was clearly superior to Niki's McLaren. But over the years Niki has learned that what's in front of you may not always be there. And he has also learned that fate often takes a hand. Which it did.

Warm-up. Bang! No Rosberg on pole. One down, thinks Niki. Start. Bang! Another down, Patrese's Brabham turbo. Only Niki didn't really see much of that. *"I didn't see any of the action. All I saw was that Rosberg wasn't in his position on the grid. After that, I thought only of my race."* In the mess that ensued from that start-line shunt between Patrese and Arnoux, Niki was favoured by fortune — which owes him a few good turns. First, the mess was all on one side of the track and Niki was able to go past without incident — taking to the grass at the appropriate moment. Second, the involvment was limited. Thus, finishing the first lap,

Niki could see ahead of him only one threat: Nelson Piquet in the turbo-powered Brabham. Not an inconsequential opponent, even if Niki must have fancied his chances on a circuit, and a hot day, that did not particularly favour the turbos.

Again the gods smiled on Niki, as they abandoned Nelson. *"I have to admit I took over the lead a lot faster than I expected"*, said Niki after the race, adding, ever perfectly in character, *"After that, I think you can say I controlled the race."* Indeed he did! From lap 9 when Piquet's engine went, to the end, when he crossed the line 25.7 seconds ahead of Didier Pironi's Ferrari, Niki's progress was majestic. And elastic. Now he was nearly 50 seconds up, now 40; at the end he was only nursing a car and tyres that hardly needed such careful handling. But then, no one was pushing him. *"It is a lot easier to do when you're not challenged"*, said Niki laconically.

It was Lauda's second win of the season (the first was at Long Beach) and puts him third in the championship. Long before the race, he was not sanguine about his ultimate chances. Indeed, it often seemed as though a third title was not why he really raced. *"The tracks to come are all but one super-quick circuits, they are turbo circuits, and I'd be surprised to see an aspirated engine win at any of them"*. The same calculation, of course, was being made by Keke Rosberg. And by Niki's team-mate John Watson. Brands Hatch was an all-or-nothing race.

It is really the view Niki now takes of his comeback that I find compelling. It is half-a-season old, it has been more than a little successful: how has he found it? Specifically, is his enjoyment as great as it once was? Niki was categorical. The first, sharp word I got was *"No."* Then came the explanation. *"The older you get, especially after being away, you see the world does not turn just around motor racing X. When you are 19 and you do 10 years in the sport, the only thing you have seen is motor racing. After being away for two years in a completely different area, everything is changed. It's a wider area, you know other people, other things. And when that world widens, it becomes more difficult. You cannot go at itwith the same zest as a 22-year-old. The challenge that really remains is that of getting myself into gear despite having a wider view and greaterdifficulties. As I was in the past. Or even better."*

The modersty is also characteristic. But the truth is also there now. All the points the younger Niki had to make — not to speak score — are made. And scored. It is not by accident that he was, not by hisown doing, the virtually unamimous choice as spokesman and front man for the drivers during the great Kyalami strike The role was thrust upon him. "I saw there a lot of younger drivers wholooked to me. They wanted to know what I would do. If I would stand firm, so would they. I told them I would not change my position; they did not change theirs".

It brings back memories of that day, wet, hazy and miserable, at the end of 1976. Under Mount Fuji. Where there was a chance that Niki could, in spite of everything — in spite of the accident, the trials of survival and rehabilitation — repeat his championship. Hunt raced in the rain, with the hole in his helmet drilled so he could see (as so weell caught bu Pete Lyons in a long-ago report.) Niki did not. It was a matter of principle. It was not safe. It isone of the remarkable pages of a long relationship with Enzo Ferrari that the commendatore never criticized him for that decision. It was his to take and he took it.

When Niki began this season, it is not hard to recall first the sorrow that many of us felt, that a great driver should again risk his much-scarred skin and that, in doing so, he might not be able to rescale the heights when faced ith a whole new technology and younger drivers out to eat him alive, and second, the widespread feeling that he was doing it for the money: to bail out his airline. Neither has turned out to be a just estimate. The risks Niki has always acknowledged; the competitiveness is all there; the youngers have not even nibbled at the tail of the fox; and money, for Niki, is just another game that he, like everyone else in the sport, plays. And plays well.

"Motor racing," he said, *"is a very professional game. A driover is stupid to drive for one penny less than he can get. It is simply logical to ask for the maximum you can extract out of your situation. Not because I want the maximum, but because I want the situation."* Which is, of course, a matter or pirde. And competition. *"Why should I drive for less when I can drive for more? I do not hang on to a fee. I do not have an idea in my head and pursue that. Money is for living. Other wise you have it and you still haven't lived."*

On the day, then, everything was going for Niki: the fates of others, his own disci pline and a McLaren that was going like a dream. The ultimate 'no problems' territory of the Lauda we know. Who was, oddly enough for a man who professes to be so unsentimental, much moved by the reception he got from the massed thousands at Brands Hatch. *"I wasn't perhaps the man they wanted to see win,"* said Niki, *"but they gave me real tributre."* Which is something Niki, I sus pect, not only enjoys but expects. And something which we must all acknow ledge he deserves. Not only for his 19th victory, but for the man he is.

Keith Botsford

PRACTICE

All possible water had fallen out of the old Kent sky on Thursday, so that Friday practice is under blue skies. In fact, it is hot when the first 90-minute untimed session begins — 28° on the track — and the drivers are all hanging loose. For seven of them, there is at least no

prequalifying as there had been at Zandvoort, for Emilio de Villota, disappointed because he was uncompetitive and upset at spending a fortune without making it into the race, declined to enter his semi-official March.

All eyes are on Nigel Mansell, who is going to go out in his Lotus with a plastic brace around his left forearm to protect the cartilege and bone so badly wrenched at Montreal. Attention, too, for the Fittipaldi and Talbot-Ligier pits. In the former sits the new and long-awaited F9, not quite ready to roll; in the second, packed with four cars — two JS17s and two JS19s — there is an air of cheerful expectation. Cheever put in his first hour in a JS17 to test its potential in case he needs it during qualifying, and Laffite goes round while waiting for his mechanics to put the finishing touches to his new JS19. Which doesn't actually happen until there are only 20 minutes before the flag. Laffite manages just one lap, with the problems inherent in an untried car soon showing up.

Aspirated cars are very much on the up: De Angelis puts his Lotus ahead of Lauda's McLaren, Daly's Williams and Watson's McLaren with a fine 1'10''370. All four are ahead of Pironi who is the front-runner among the turbo-powered cars: just as at Zandvoort, Pironi was comparing the relative values of the fore-and-aft and the transverse gearboxes. Rosberg, having put in a bare 11 laps — his car had stopped out on the circuit without fuel — is sixth, ahead of Piquet and Alboreto. Drivers on Michelin tyres lie much further back: 9th and 13th for Giacomelli and De Cesaris of Alfa Romeo, and 15th and 21st for the Renaults of Arnoux and Prost, the latter having had to use his spare after his engine fell silent on the track. And, as one of the pointed out with a laugh, ''We can't even blame the tyres, because Niki was sneaky enough to show how they could work''.

The Toleman-Harts — placing 10th with Warwick and 16th with a joyous Fabi — showed that as soon as the new chassis is built, the Hart engine will finally be lodged in worthy style. Osella, on the other hand, had — as is alas! all too often the case — terrible engine problems. This time its Cosworth folded at the end of the session during a re-start in the pits: the poor mechanic bent over the rear wing with a weary air got a dose of boiling water through the exhaust pipes. There was no choice but to work right through the

lunch break.

When the first 60 minutes of qualifying start, the sky is partly cloudy and the temperature has dropped several degrees, which is no help whatever to those who are out on Michelin tyres, which need the maximum heat possible to make the best of their rubber. Right away, Lauda and Watson drop back to 7th and 11th. Watson's McLaren is now preceded by the two Alfa Romeos, which makes the whole question just a little bit suspect.

With his first set of qualifiers, Daly is briefly on pole, before yielding to his team-mate Rosberg, who puts in an excellent 1'10''415. The two men then have varying fates: held up by Arnoux on his flying lap, Daly could not improve on his times, while Rosberg, despite brushing Arnoux under braking at Druids and sending the latter into a spin, is lucky enough to come out of the incident unharmed, his Williams taking him to a fabulous lap of 1'09''415. He is the only driver to beat the 70-second mark. Meanwhile, in his spare, De Angelis protects his second placing for some good while, being bumped off it at the very end of practice by Pironi and Piquet, who both register their best times on their final lap. As Elio said, «I am sure both Ferrari and Brabham screwed up their boosts at the end, and I feel quite confident for the rest».

As far as Pironi is concerned, the truth is a bit more complex. After he put his first set of qualifiers on the 'transverse' model, that car suffered a few electrical problems. He then put his second set on the 'fore-and-aft' model. Both cars had a rear one-piece wing which gave him little downforce. His team-mate Tambay on the other hand had a three-section rear wing which caused him oversteering problems.

Prost pushes his Renault up to the 8th row and the Tolemans continue to show themselves competitive, with Fabi, lying 17th, being followed by a highly aggressive Jarier. At Talbot-Ligier, panic reigns: with just six laps finished in the JS19, Cheever turns out to be at the very back of the grid. With the Fittipaldi F9 still unable to go out on the circuit, Serra manages an encouraging 20th place in the hoary F8D.

It is even hotter on Saturday and a huge crowd gathers in the stands around the Kent circuit. Rosberg is by a long shot the fastest in the 90 minutes of untimed practice. His nearest rival, Pironi, is 1''6 behind him. Lauda, Patrese, De Angelis, Alboreto, Giacomelli and De Cesaris follow, but three of them have have serious problems: Niki Lauda blew an engine, Giacomelli went spectacularly off the track at Hawthorn after a wing strut broke on him and De Cesaris had a puncture on his left rear wheel caused by unidentified debris on the pit-lane straight. Practice is briefly

stopped while the debris is cleared. Piquet, in 11th place, broke a generator belt out on the circuit and after a pit-stop to change cars, was unlucky enough to see his gasket go. During this break, the Brabham mechanics are hardly idle. The same is true in the Ferrari pits where much thought is being devoted to the over- and under-steering problems affecting Tambay, who is now equipped with a one-piece rear wing.

Having started in the JS19, half way through the session Cheever goes out in the JS17 and promptly improves his time. At Fittipaldi, Serra finally gives the F9 its first run since Donington; the F9 quickly shows itself a far better performer than the F8D. To be on the safe side, however, he will take out the latter car in the last qualifying session.

When the last 60 minutes of qualifying practice start at 1pm on Saturday, it is clear and hot. Unlike Zandvoort, however, where in like conditions few drivers could improve their times, no less than 21 did so at Brands. Rosberg's pole position, on Thursday, is the exception and holds up.

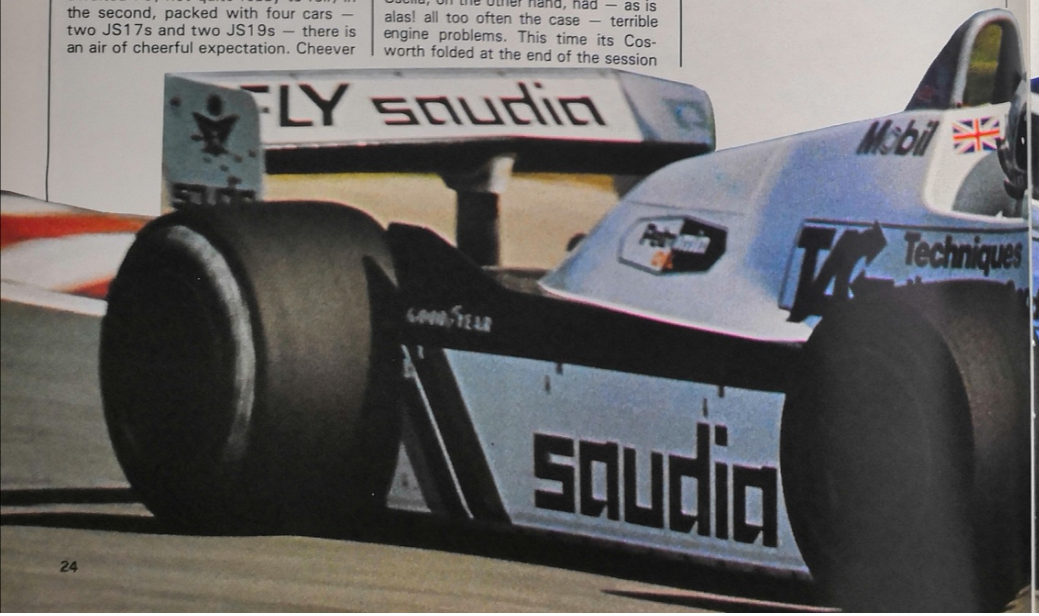
Nonetheless, there are anxious moments in the Williams camp. With the boost apparently turned well up, the two Brabhams of Patrese and Piquet turn in times of 1'09''627 and 1'10''060 respectively and are now right behind the FW08; the achievement is all the more considerable given that Piquet was held up at Paddock during his flying lap.

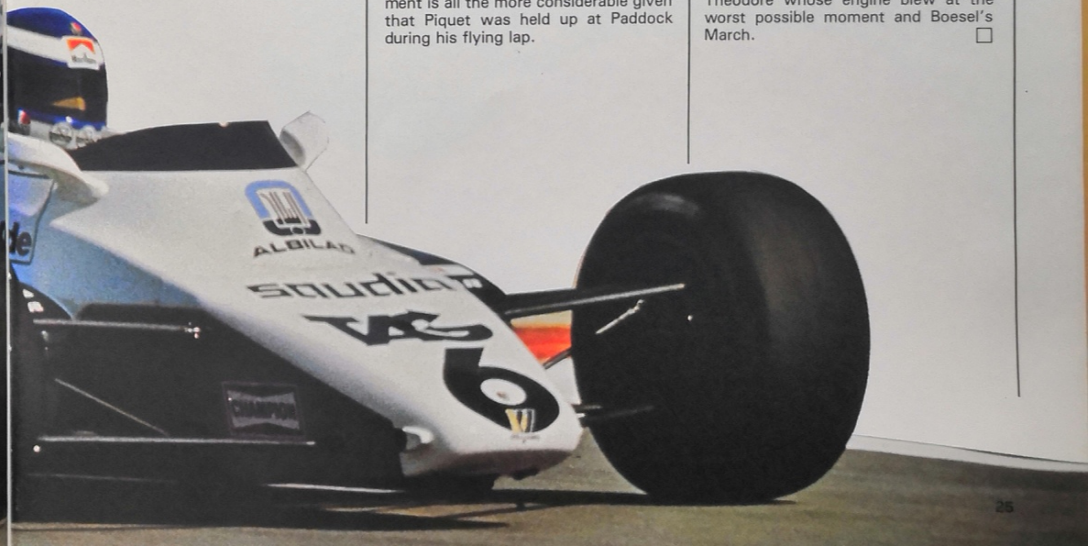
The two Brabhams thus push Pironi back to the outside second row, the Ferrari having been unable to improve its time, despite Pironi using both of the cars at his disposal. The two Renaults find the right compromise and now look competitive again, Arnoux finishing on the third row and Prost on the fourth. The opposite happens at Alfa Romeo, where the Friday times remain unchanged: after his morning spin, Giacomelli is out in the spare and De Cesaris, despite all his efforts, pays for Alfa Romeo's failure to practise at Brands Hatch: to the disappointment of Gérard Ducarouge, who admits that his cars haven't been out since Zandvoort. Laffite and Cheever find a little something to smile about: Laffite, in the JS19, puts in the 20th fastest time and Chee-

ver, who chose the JS17, just manages to qualify — a few minutes from the end — with the second set of qualifiers.

Tambay is a disappointed man. An engine problem keeps him stopped out on the circuit just as he had put on his second set of qualifiers.

Finally, building success on success, the Tolemans draw steadily away from the discard heap of the non-qualifiers. Fabi is 15th and precedes his number one, Warwick, by 33/1000ths of a second. The non qualifiers include the two ATS, paying now for their accidents in North America, Jan Lammers' Theodore whose engine blew at the worst possible moment and Boesel's March. □





THE RACE

Niki Lauda and his McLaren team got it easier than he could have ever guessed at Brands Hatch: three of his closest rivals were eliminated at the start. Only Piquet's turbo Brabham stood between him and victory, and even that obstacle was short lived, this leaving the way clear for an easy run home to his second win of the season and third place in the title chase.

by Jeff Hutchinson

Keke Rosberg's day started going wrong during the pre-race morning warm-up. It didn't get any better by race time, as he sat at the front of the grid waiting for the warm-up lap and his engine refused to fire up because of a vapour lock in the fuel system. By the time the team got him push started, he was too late to take up his rightful place at the front of the grid. One car less for Lauda to worry about. A few seconds later there were two more less between Lauda and victory as the light turned green and Patrese, now all alone on the front row, spoiled the best chance of his racing career when he didn't get first gear properly and his Brabham sat stationary on the grid.

Just as in Montreal, the inevitable happened, fortunately with less serious consequences. Patrese was rammed from behind by René Arnoux's Renault and happily the two cars shot to one side of the track leaving the way clear for the rest of the field to squeeze through on the right, only a stray wheel getting in the way of the rest which unfortunately eliminated Tio Fabi's Toleman and gave Jacques Laffite a heart stopping moment.

Lauda made a quick move to the left in the confusion and as the cars that were left roared down into Paddock, only Nelson Piquet's Brabham stood between Lauda and the lead.

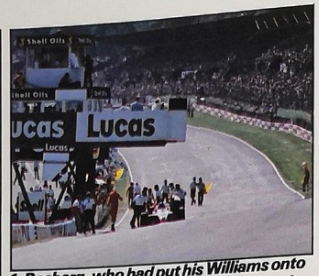
With a Brabham plan to start their cars light and fast and than stop for more fuel and tyres half way through the race, it was pointless for Lauda to try to keep the flying Piquet in sight. Within nine laps Piquet had pulled out ten seconds and the Brabham plan seemed to be going just the way they had hoped. But on lap 10 it was over. Piquet went around Paddock with a dead engine after the fuel metering unit had quit; he rolled to a stop behind the pits, his racing over for the day.

Lauda rushed past the stricken Brabham muttering a *Gott sei dank* into his helmet: bar a mechanical problem, the race was his.

His tyres were holding up well, his brakes were good and everything else was working as it should. And that's the way they stayed for the next 66 laps until the chequered flag came out and gave Lauda his second win of the season, a clear 25 seconds ahead of the next car.

That was the Ferrari of Didier Pironi, nursing his Goodyear tyres which, unlike the Michelin rubber on the McLaren, did not take kindly to the unusually hot Brands weather as the story that unfolded behind him was to show.

But Pironi didn't have it all his own way. For the second time in two weeks, Derek Warwick and the Toleman Hart was the sensation of the early part of the race. Warwick carved his way through the field to take second place from Pironi 26 laps into the race. *"I cheered into my helmet when I went by the Ferrari,"* said Warwick. But his cheers soon turned to sighs of frustration when on lap 41 he put his foot down out of Druids and a driveshaft snapped. Pironi had it all his own way for the rest of the race, but there was plenty more action behind.



1. Rosberg, who had put his Williams onto pole on Friday, could not start for the warm-up. He started at the back of the grid. (B. Asset).

2. Rosberg is absent from the front row. Piquet is quick off the mark while Patrese stalls. Arnoux smashes into him and the left front wheel of the Renault heads towards Fabi's Toleman. (B. Asset).

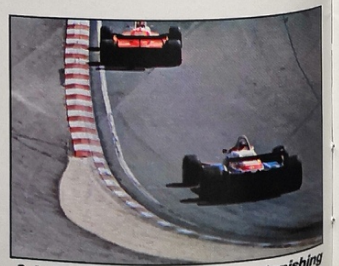
3. With his special (light) Brabham, out on half-filled tanks, Piquet forges ahead of Lauda's McLaren. (B. Asset).

4. Frustrated but savage in attack, Rosberg has already made it back to 15th: having blown by Watson, Cheever, Surer, Baldi and Laffite, he challenges Henton. (B. Asset).

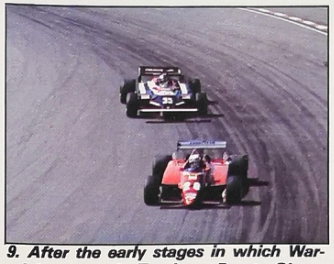
5. De Angelis has taken over fourth place ahead of Alboreto and behind Piquet, Lauda and Pironi. His Tyrrell will soon drop back and stop to change tyres and skirts. (B. Asset).

6. With the 10th lap about to come up, Piquet's engine cuts out with the Brabham already 11 seconds in the lead. Lauda catches up... (B. Asset).

7. ... and takes up the lead ahead of Pironi. At this point the Ferrari driver, having seen Watson out on lap 3 after the shunt between Serra and Jarier, knows he can take over the championship lead. (B. Asset).



8. Laffite, in his JS19, had an astonishing race. Here he is behind Giacomelli, but between laps 7 and 16 he works his way up to 7th before his gearbox gives out on lap 42. (B. Asset).



9. After the early stages in which Warwick overtook Tambay, Prost, Giacomelli, De Cesaris and Daly, his Toleman-Hart is set to attack Pironi. It is now lap 25... (B. Asset).

10. ... and here, on lap 26, is the spectacular outcome: Warwick is now second, some 30 seconds behind Lauda's McLaren. (B. Asset).

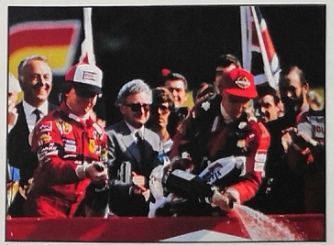
11. For half the race, Tambay was in the shadows. De Cesaris in his Alfa Romeo holds him off from laps 22 to 46 before finally letting him by. (B. Asset).

12. Once past De Cesaris, Tambay takes on de Angelis' Lotus, which lies third behind Lauda and Pironi. The battle goes on from lap 47 to lap 75, one from the flag. The Ferrari makes a spectacular breakthrough. (B. Asset).

13. Two laps from the finish, Baldi's Arrows, lying 9th, loses its engine in front of the pits. Baldi kept his classification, for Mass's March was too far back to challenge him. (B. Asset).

14. An easy winner, Lauda lifted off at the end to nurse engine, gears and tyres. He makes it past the finish line 25 seconds ahead after hoarding over 40 seconds' lead. (B. Asset).

15. Fourth place is being contested bitterly behind Tambay throughout the last lap. De Angelis emerges triumphant, just in front of Daly and Prost, who has made a good comeback. On the right, a lap back, Giacomelli moves over. (B. Asset).



16. Lauda has K.O.'d the turbos. All aglow, he shares the podium with Pironi and Tambay. Didier takes over the championship lead and for the first time in his career Patrick makes it to the top of the ladder. (B. Asset).

Action had begun right after the start, as Rosberg carved his way through the field in a bid to stay with the leaders. By lap 2, he was already up to 14th place, right behind Chico Serra and Jean-Pierre Jarier as they went into Hawthorn and Keke chased them flat out in fifth. *"Chico went inside and Jarier turned in. Chico flew into the air spinning around off Jarier's front wheel,"* said Keke. He saw Jarier spin off to one side out of the corner of his eye. Behind, Watson spun as he tried to avoid the Osella. Watson didn't hit anything, but he could not re-start the stalled McLaren and the race had lost another three cars.

Michele Alboreto had made a good start and was running in fifth place for the first few laps, but he too was soon in trouble. He had to go into the pits with his Tyrrell porpoising badly and almost undriveable. The team did what little they could, but it was not enough and after another stop and then a puncture, Alboreto's day ended with a broken engine.

Daly had moved well up into the front-runners after passing De Angelis for third place, and by lap 13 Rosberg, to the delight of the crowd, had got himself up as far as sixth. Despite his progress, he know that the race that he thought would be his was now slipping away, along with the front end of the Williams which was blistering its tyres because of a severe understeer prblem.

On lap 16 Rosberg was in the pits for fresh tyres and this stop dropped him to the back of the field again. He stopped again after doing as many laps again and then must have been almost relieved when he went out for good with no fuel pressure.

Daly was in the same trouble and he also stopped for fresh rubber leaving De Angelis third behind Pironi in the closing stages of the race.

But the drama was still to come. Tambay, who had dropped away in the early laps nursing a problem front left tyre started to pull back the Lotus at the end of the race; then as the flag came out for Lauda, De Angelis' car spluttered with low fuel pressure. Tambay swept by on the very last lap, while Daly, minus a skirt after running over a kerb 15 laps from the finish, also closed on the Lotus. Daly's mirrors were now full of Prost's Renault. After a bad start with a damaged skirt (probably caused during the start line chaos), Prost found the handling of his Renault getting better all the time and he even managed to unlap himself. *"I had to block him on the last lap to keep him behind,"* admitted Daly and he did just that, the Lotus, Williams and Renault taking the flag nose-to-tail, just a couple of seconds behind Tambay and Pironi.

Giacomelli, a lap down, took seventh place with Henton next after a tyre stop and a surprising fastest lap of the race.

Baldi and Mass were the only other survivors in this race of attrition.

Not an exciting race compared to the promise it showed a few minutes before the start, but definitely an interesting and enjoyable one with a popular winner. □

Brands Hatch statistics

BRITISH GRAND PRIX

Date : July 18, 1982
Circuit : Brands Hatch
Race distance : 76 laps, 1198.588 miles
Weather : Fine, hot
Attendance : 150 000

PREVIOUS WINNERS

(Last five races)

1977 :	HUNT (McLaren Ford)
1978 :	REUTEMANN (Ferrari)
1979 :	REGAZZONI (Williams)
1980 :	JONES (Williams)
1981 :	WATSON (McLaren)

STARTING GRID

PATRESE	Brabham-BMW BT50	ROSBERG	Williams FW 08
	1'09"627		1'09"540
PIRONI	Ferrari 126 C2	PIQUET	Brabham BMW BT50
	1'10"066		1'10"060
ARNOUX	Renault RE30B	LAUDA	McLaren MP4 1B
	1'10"641		1'10"638
PROST	Renault RE30B	DE ANGELIS	Lotus 91
	1'10"728		1'10"650
DALY	Williams FW08	ALBORETO	Tyrrell 011
	1'10"980		1'10"892
WATSON	McLaren MP4 1B	DE CESARIS	Alfa Romeo 182
	1'11"418		1'11"347
GIACOMELLI	Alfa Romeo 182	TAMBAY	Ferrari 126C2
	1'11"502		1'11"430
WARWICK	Toleman-Hart TG81C	FABI	Toleman-Hart TG81C
	1'11"761		1'11"728
JARIER	Osella FA1C	HENTON	Tyrrell 011
	1'12"436		1'12"080
LAFFITE	Talbot-Ligier JS19	GUERRERO	Ensign N181
	1'12"695		1'12"668
SURER	Arrows A4	SERRA	Fittipaldi F8D
	1'13"181		1'13"096
CHEEVER	Talbot-Ligier JS17	MANSELL	Lotus 91
	1'13"301		1'13"212
BALDI	Arrows A4	MASS	March 821
	1'13"721		1'13"622

Did not qualify

Winkelhock (ATS HGS1) 1'13"741
Lammers (Theodore TY02) 1'13"815
Salazar (ATS HGS1) 1'13"866
Boesel (March 821) 1'13"968

PROVISIONAL DRIVERS WORLD CHAMPIONSHIP

(After South Africa, Brasil, USA West, San Marino, Belgium, Monaco, Detroit, Montreal, Holland, Great Britain).

1.	PIRONI	–	1	–	9	–	6	4	–	9	6	35
2.	WATSON	1	6	1	–	9	–	9	4	–	–	30
3.	LAUDA	3	–	9	–	–	–	–	–	3	9	24
4.	ROSBERG	2	–	6	–	6	–	3	–	4	–	21
5.	PROST	9	9	–	–	–	–	–	–	–	1	19
	PATRESE	–	–	4	–	–	9	–	6	–	–	19
7.	PIQUET	–	–	–	–	2	–	–	9	6	–	17
8.	DE ANGELIS	–	–	2	–	3	2	–	3	–	3	13
9.	CHEEVER	–	–	–	–	4	–	6	–	–	–	10
	ALBORETO	–	3	3	4	–	–	–	–	–	–	10
11.	MANSELL	–	4	–	–	–	3	–	–	–	–	7
	DALY	–	–	–	–	–	1	2	–	2	2	7
13.	VILLENEUVE	–	–	–	6	–	–	–	–	–	–	6
	REUTEMANN	6	–	–	–	–	–	–	–	–	–	6
15.	DE CESARIS	–	–	–	–	–	4	–	1	–	–	5
16.	TAMBAY	–	–	–	–	–	–	–	–	–	4	4
	ARNOUX	4	–	–	–	–	–	–	–	–	–	4
18.	JARIER	–	–	–	3	–	–	–	–	–	–	3
19.	SURER	–	–	–	–	–	–	–	2	–	–	2
	SALAZAR	–	–	–	2	–	–	–	–	–	–	2
	WINKELHOCK	–	2	–	–	–	–	–	–	–	–	2
22.	BALDI	–	–	–	–	–	–	–	–	1	–	1
	LAFFITE	–	–	–	–	–	–	1	–	–	–	1
	SERRA	–	–	–	–	1	–	–	–	–	–	1

RESULT

1. LAUDA (McLaren MP4/1B), 76 laps (198.588 miles) in 1h35'33"812, av. speed 200,643 kph.

2.	PIRONI	Ferrari 126C2	25"726 behind
3.	TAMBAY	Ferrari 126C2	38"436 behind
4.	DE ANGELIS	Lotus 91	41"242 behind
5.	DALY	Williams FW 08	41"430 behind
6.	PROST	Renault RE30B	41"636 behind
7.	GIACOMELLI	Alfa Romeo 182	1 lap behind
8.	HENTON	Tyrrell 011	1 lap behind
9.	BALDI	Arrows A4	2 laps behind
10.	MASS	March 821	3 laps behind

Unclassified

ALBORETO	Tyrrell 011	32 laps behind

CONSTRUCTORS' WORLD CHAMPIONSHIP

1. McLaren 54 pts - **2.** Ferrari 45 pts - **3.** Brabham 36 pts - **4.** Williams 34 pts - **5.** Renault 23 pts - **6.** Lotus 20 pts - **7.** Talbot 11 pts - **8.** Tyrrell 10 pts - **9.** Alfa 5 pts - **10.** ATS 4 pts - **11.** Osella, Arrows 3 pts - **13.** Fittipaldi 1 pt.

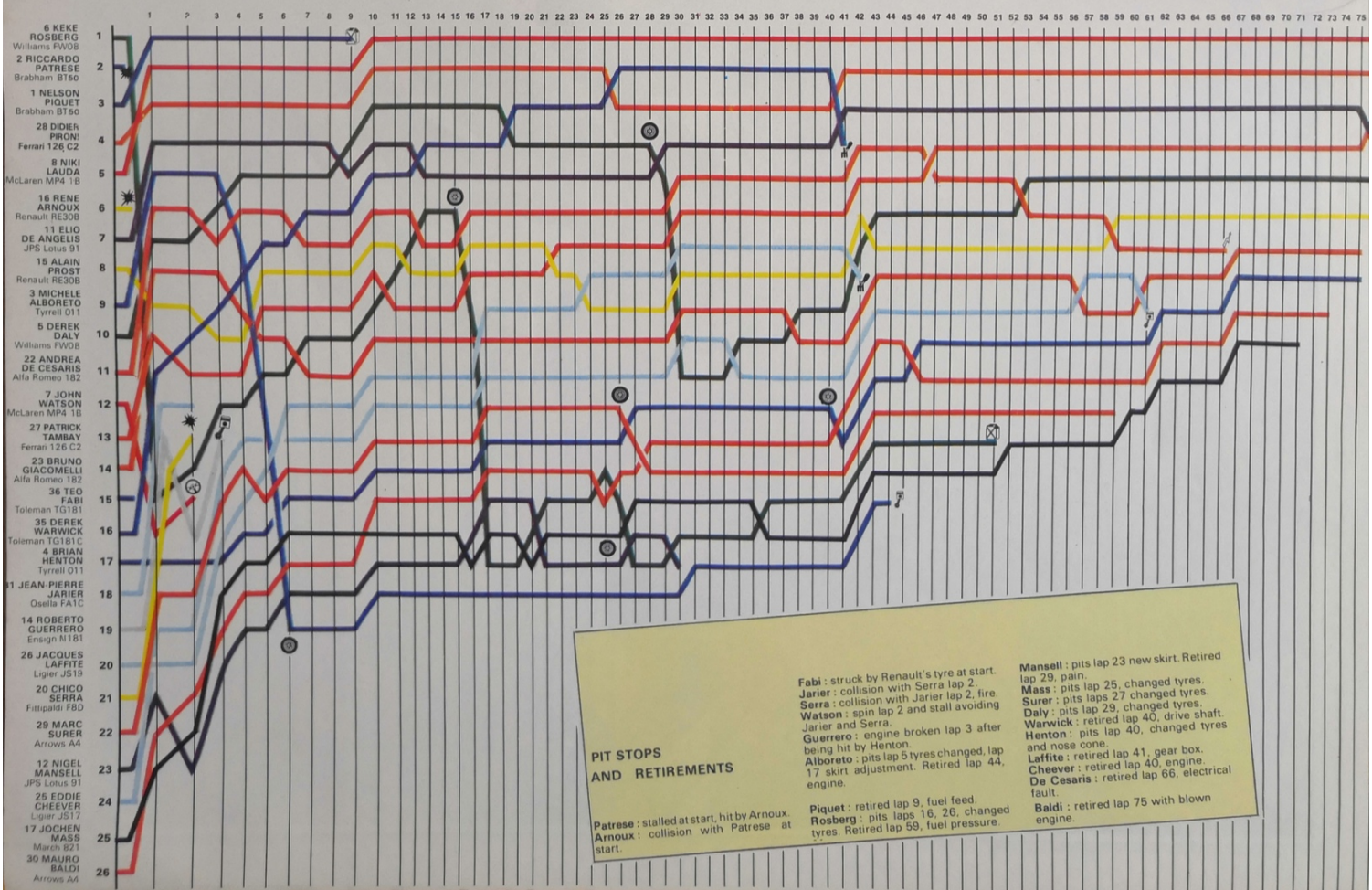
OFFICIAL QUALIFYING TIMES

	Untimed Practice	Timed Practice	Untimed Practice	Timed Practice	Warm-up sunday
ROSBERG	1'12"040	**1'09"540**	1'09"645	1'10"663	1'14"192
PATRESE	1'13"873	1'10"980	1'11"988	**1'09"627**	1'12"940
PIQUET	1'12"312	1'10"418	1'12"643	**1'10"060**	1'12"468
PIRONI	1'11"640	**1'10"066**	1'11"306	1'10"386	1'14"330
LAUDA	1'10"996	1'11"303	1'11"463	**1'10"638**	1'13"821
ARNOUX	1'13"783	1'12"371	1'15"892	**1'10"641**	1'16"018
DE ANGELIS	1'10"370	**1'10"650**	1'12"017	1'10"735	1'14"753
PROST	1'14"829	1'11"333	1'13"724	**1'10"728**	1'15"470
ALBORETO	1'12"482	1'11"904	1'12"158	**1'10"892**	1'14"673
DALY	1'10"997	**1'10"980**	1'13"810	1'11"197	1'14"423
DE CESARIS	1'13"721	**1'11"347**	1'12"236	1'12"309	1'16"099
WATSON	1'11"281	1'11"556	1'14"205	**1'11"418**	1'15"143
TAMBAY	1'13"228	1'11"750	1'14"676	**1'11"430**	1'14"813
GIACOMELLI	1'13"077	**1'11"502**	1'12"165	1'15"549	1'16"923
FABI	1'13"806	1'12"979	1'13"023	**1'11"728**	1'13"822
WARWICK	1'13"257	1'12"236	1'12"596	**1'11"761**	1'13"518
HENTON	1'14"007	1'13"952	1'12"464	**1'12"000**	1'14"316
JARIER	1'14"487	1'13"109	1'13"734	**1'12"436**	1'15"669
GUERRERO	1'14"583	1'14"877	1'12"825	**1'12"668**	1'16"307
LAFFITE	—	1'13"402	1'14"713	**1'12"695**	1'14"737
SERRA	1'14"005	1'13"255	1'14"376	**1'13"096**	1'16"174
SURER	1'14"307	**1'13"181**	1'13"711	1'13"701	1'17"049
MANSELL	1'13"723	1'13"545	1'13"259	**1'13"212**	1'15"822
CHEEVER	1'14"802	1'15"977	1'13"991	**1'13"301**	1'17"484
MASS	1'13"469	1'14"657	1'13"834	**1'13"622**	1'16"495
BALDI	1'13"996	1'15"246	1'13"611	**1'13"721**	1'17"262
WINKELHOCK	1'14"547	**1'13"741**	1'15"816	1'15"548	—
LAMMERS	1'15"981	**1'13"815**	1'13"540	1'14"303	—
SALAZAR	1'15"804	1'15"330	1'14"932	**1'13"866**	—
BOESEL	1'15"432	1'15"724	1'14"300	**1'13"968**	—

THEIR FASTEST LAPS

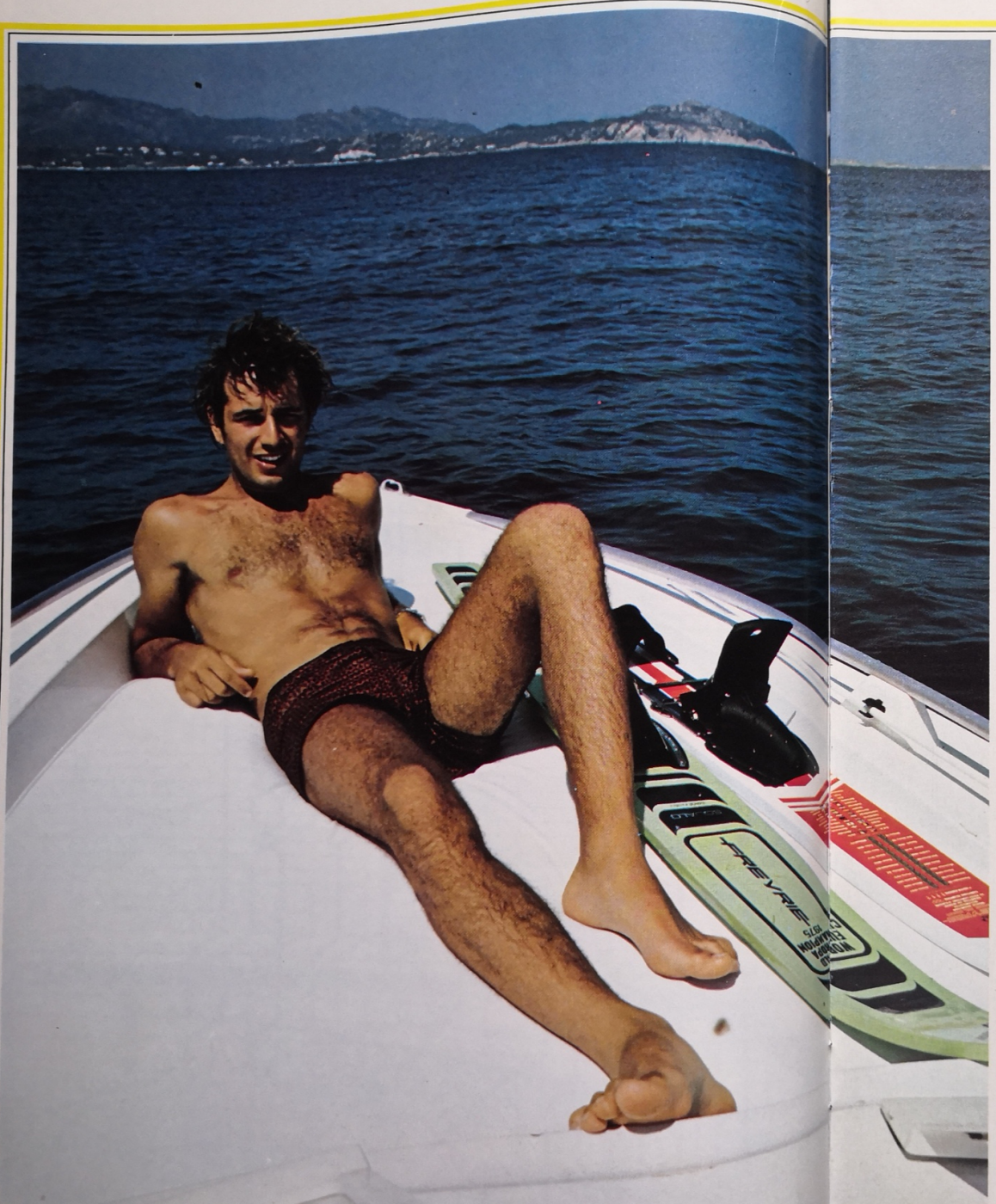
	Time	Lap n°
LAUDA	1'13"639	47
PIRONI	1'14"134	43
TAMBAY	1'14"190	59
DE ANGELIS	1'14"198	54
DALY	1'13"179	71
PROST	1'13"264	66
GIACOMELLI	1'14"817	53
HENTON	1'13"028	63
BALDI	1'15"826	54
MASS	1'16"287	30
DE CESARIS	1'15"138	52
CHEEVER	1'14"977	68
SURER	1'15"782	30
ROSBERG	1'14"222	19
ALBORETO	1'14"787	31
LAFFITE	1'14"904	33
WARWICK	1'14"063	39
MANSELL	1'16"163	28
PIQUET	*1'13"688*	*9*
GUERRERO	*1'23"148*	*3*
JARIER	*1'22"025*	*2*
SERRA	*1'21"741*	*2*
WATSON	*1'21"716*	*2*

ronde - Lap by lap - Giro per giro - Runde um runde - Tour par tour - Vuelta a vuel


6 KEKE ROSBERG Williams FW08
2 RICCARDO PATRESE Brabham BT50
1 NELSON PIQUET Brabham BT50
28 DIDIER PIRONI Ferrari 126 C2
8 NIKI LAUDA McLaren MP4 1B
16 RENE ARNOUX Renault RE30B
11 ELIO DE ANGELIS JPS Lotus 91
15 ALAIN PROST Renault RE30B
3 MICHELE ALBORETO Tyrrell 011
5 DEREK DALY Williams FW08
22 ANDREA DE CESARIS Alfa Romeo 182
7 JOHN WATSON McLaren MP4 1B
27 PATRICK TAMBAY Ferrari 126 C2
23 BRUNO GIACOMELLI Alfa Romeo 182
36 TEO FABI Toleman TG181
35 DEREK WARWICK Toleman TG181C
4 BRIAN HENTON Tyrrell 011
31 JEAN-PIERRE JARIER Osella FA1C
14 ROBERTO GUERRERO Ensign N181
26 JACQUES LAFFITE Ligier JS19
20 CHICO SERRA Fittipaldi F8D
29 MARC SURER Arrows A4
12 NIGEL MANSELL JPS Lotus 91
25 EDDIE CHEEVER Ligier JS17
17 JOCHEN MASS March 821
30 MAURO BALDI Arrows A4

PIT STOPS AND RETIREMENTS

Patrese : stalled at start, hit by Arnoux.
Arnoux : collision with Patrese at start.
Fabi : struck by Renault's tyre at start.
Jarier : collision with Serra lap 2.
Serra : collision with Jarier lap 2, fire.
Watson : spin lap 2 and stall avoiding Jarier and Serra.
Guerrero : engine broken lap 3 after being hit by Henton.
Alboreto : pits lap 5 tyres changed, lap 17 skirt adjustment. Retired lap 44, engine.
Piquet : retired lap 9, fuel feed.
Rosberg : pits laps 16, 26, changed tyres. Retired lap 59, fuel pressure.
Mansell : pits lap 23 new skirt. Retired lap 29, pain.
Mass : pits lap 25, changed tyres.
Surer : pits laps 27 changed tyres.
Daly : pits lap 29, changed tyres.
Warwick : retired lap 40, drive shaft.
Henton : pits lap 40, changed tyres and nose cone.
Laffite : retired lap 41, gear box.
Cheever : retired lap 40, engine.
De Cesaris : retired lap 66, electrical fault.
Baldi : retired lap 75 with blown engine.



Sea, sun, a ship. The handsome young Roman lives the aristocrat's life to the full.

ELIO DE ANGELIS: WEALTHY TALENT... WASTED?

A touch of dash, Essex style, and a touch of class, à la de Angelis.

He looks like a tennis player. He's shown many times that he has the skill and the inclination to win Grands Pirx. For goodness' sake, he's also an accomplished pianist who adores the work of Stevie Wonder. But at 24, Elio de Angelis is still without a GP victory. Money helped him to where he is, and money will take him further. But the money which is important to him has nothing to do with the millions that stand to the credit of his wealthy father. What drives Elio de Angelis is his own worth in a high-priced profession.

by Mike Doodson

Who doesn't want to be wealthy and good-looking ? For the 99.9 per cent of the world's population who still never aspire to either of these advantages, it must be difficult to imagine that there are handicaps to wealth and good looks. There are (for example) the temptations which finally got to Gatsby, the road that leads through bonhomie to overindulgence and an early grave.

On the intellectual plane, wealth can be a positive barrier. How many masterpieces were painted in a seaside penthouse ? How many great works of literature flowed from the pen of a millionaire ? Talent is rarely suppressed by indigence : more often than not, poverty is the spur that leads to an artist's fame.

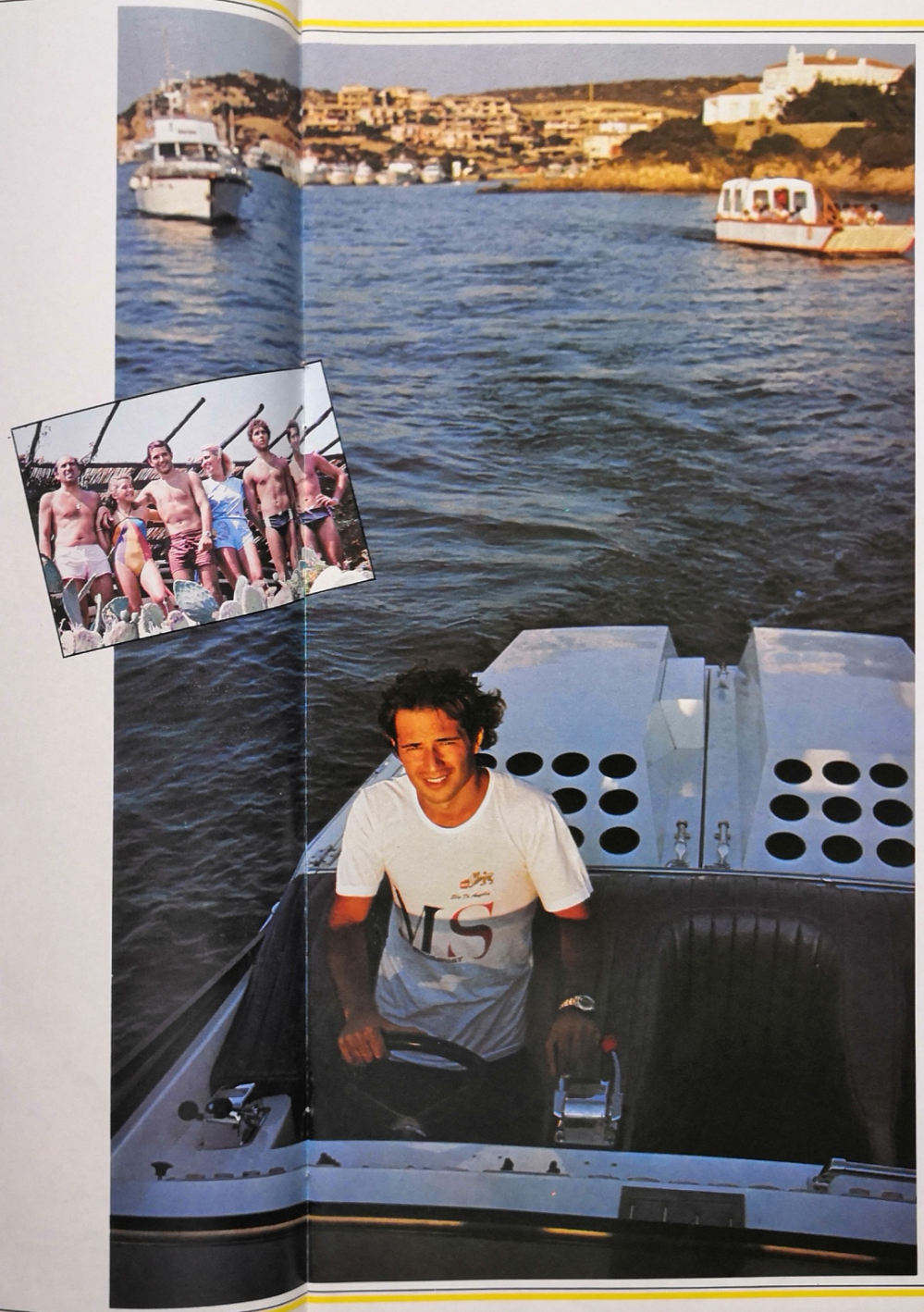
Today, there are practical and political drawbacks to individual wealth. If your inherited cash hasn't been pilfered legally by a so-called enlightened government, there's a good chance that private enterprise will be chasing it in yet more devious (and unpleasant) ways. So it is that when Elio de Angelis steps off a plane to visit his family in Rome, waiting for him will be a couple of personal armed bodyguards and a bulletproof limousine. If he wants to stop on his way to the family villa for a takeaway pizza, the two gentleman with the padded armpits will acompany him. The young master is on the hit list of the Red Brigades, and it is their job to ensure that he isn't summarily disposed

of by those who resent his place et the top of the social tree.
Driving recing cars, of course, is regarded as a rich man's game, etched with enough glamour to get it social recognition, effects enough to classify it with yachting and tiger-shooting as a sport worthy of a milionaire's time.

But times have changed in racing. Alfonso de Portago, the Spanish gentleman racer, mixed the Grand National with Grand Prix and got away with it, at least until he became the Mille Miglia's most spectacular casualty. In his day there was no prequalifying, and anyway you could buy your way into a decent car, to respectable results. Times have changed, as "Fon's" countryman de Villota may have just discovered to the cost of the family bank and some Madrileño sponsors.
At 20, Elio had brought his way into

Grand Prix racing. A first accomodation with Tyrrell was frustrated when Tyrrell changed his mind about the contract they'd signed (he had time to repent after a High Court judge decided in Elio's favour), and it wasn't much more than a year later before times had changed altogether. By then it was Elio's own team, Shadow, which was suing him. He'd walked out on his three-year contract after one season (and promptly found himself back in the High Court, this time on the losing — but not necessarily the repenting — side).
De Angelis is now all of 24 years old, a veteran of four tough years in F1. Psysically, though he claims to be no fitness freak, he is slim and athletic-looking. There is a calmness which suggests he could be Swiss rather than Italian. It may be significant that the lovely girl at his side, Ute, is German. They are very attached to each other and converse a lot, even though the common language has to be English. There is a throwaway casualness about his jeans and sneakers. One suspects that possibly, even, he sometimes wears the same shirt two days running. What one can't perceive from this cool exterior is that Elio de Angelis deserves his place in F1. He's been with Lotus since the beginning of 1981, its team leader since Andretti's departure at the beginning of '82. As he said, on the eve of his first-ever GP, *"you can buy your way into Formula 1. But once your arse is in the metal monocoque, the only person who can help you is yourself."* In four years, he has earned respect as a racing driver. Anyone who still describes him as a "rich kid" (as I once did) is deluding himself and insulting de Angelis. But after three more or less fruitless years with Lotus, where does this more than capable driver go from here ?
As he explains it, the answer is not immediately apparent. *"My first year with Lotus was one of experience. I managed to get some points and I had some crashes. I learned a lot and started to know how Lotus people worked.*
"The second year was the one to put this experience together. I scored more points, but it was the year that the Lotus 88 was banned. All that poltical arguing is really bad for a driver, you know : when it happens you feel that it is directed at you, personally, not at the team."
Alas, the controversy over the 88 was not the only reef which de Angelis's career struck last year. From halfway through the year he seemed to be competing for the affection of his own team with his number 2, the once impoverisshed Nigel Mansell. It is suggested that Mansell resents his partner's easier start in life.
Asked about their relationship, Elio thinks hard, but replies decisively. *"Nigel is a very difficult man, very hard for me to understand. I think he has some psychological problems : for example, he wants to be quicker than me all the time. It doesn't matter whether we can improve the car or not. He just doesn't seem to want to share our solutions when the car is difficult.*

"Part of the problem is the team, because he signed a contract for, I think, three years — as equal number one. The Old Man, Mr Chapman, is working with him. Nigel has a lot of pressure on him, and I think he is not ready for it. In England he is already regarded as a big star.
"Nigel changed a lot since he came 3rd at Zolder last year. It seemed that he felt he had made it, instantly. I liked much more the Nigel Mansell that I met two years ago..."
Ironically, de Angelis believes that he very nearly made the same mistake as Mansell. In the 1980 Brasilian GP he just failed to catch Arnoux's faltering Renault and collected an unexpected



2nd place. *"I am glad in a way that I did not win that race,"* he says with hindsight : *"a lot of people would have expected a lot from me then, because I would have been leading the world championship. And without the experience which I have got since then, I would have crashed much more, had more accidents. That is a reputation which a driver in that position should not have..."*
Evidently de Angelis is not comfortable at Lotus. The current season, 1982, should have provided him by now with the victory which continues to elude him. But Lotus's type 91, a super-lightweight carbonfibre chassis clad with the results of some intensive wind tunnel work, looked like a certain winner when it was announced. It has yet to deliver that victory, although at Brands Hatch recently it has shown signs of considerable improvement.
After almost three years with the team, Elio thinks he knows why the car is not a winner. *"It is the mentality of the team to want to make innovations,"* he says, "not to build a conventional car which copies other people's thinking. Maybe there are some things on the car which are different because Mr Chapman thinks they will work eventually, like so many other new developments which he pioneered in the past."
When he comes to look around at the end of the season, he says that he may consider a small, struggling team. As he says, Formula 1 has become more a manufacturer's playground, with tyres and turbos making whole seconds of difference in lap times, while a driver's talent counts for little more than tenths.
Perhaps strangely for someone who is endowed with so much of it, money will probably decide where Elio moves or stays as far as teams are concerned.
"As with all other drivers, money represents the value that other people place on your ability. The important thing is how much they're prepared to pay.
"No, we don't talk about it a lot, the figures don't get into the newspapers like they do with football players. Probably there is a mutual agreement between the divers about this, so that they can negotiate better with the team managers. Yes, I think I probably earn more than Nigel Mansell : I also think I get more than Keke Rosberg, because you have to consider our positions at the end of last seasons. What is important now is that Keke, on this year's results, will definitely be able to earn more than I do next year."
"Of course, money is not going to make your life," he insists, *"and especially not my life."* But in one of those peculiar situations which occur when someone is talking about the difference between earned and unearned income, he latches on to cash as the ultimate key to his own self-respect. *"It would be significant to other people, not to me. I would have more money to spend, yes. But my goal is not to spend money, it is to win races. That's all that really interests in my life."*. □

THE COSWORTH AND ITS CREATOR: Part 2

In the last issue, Keith Duckworth and Derek Gardner traced the creation and development of the formidably successful Ford-Cosworth engine, which ran its 150th race at Zandvoort two weeks ago. In this issue, the two designers and engineers look to the future of Formula One engines and of the sport in general.

Derek Gardner

Keith, we have both been responsible for particular racing car designs that would now be considered unorthodox.
We have also experimented with other forms of transmissions. Is there any other aspect of racing car design that appeals to you, either as an Engineer or as a very successful component manufacturer ?
We made a four-wheel drive car — that was not unorthodox, it was stupid and was the result of an inadequate analysis of the problem. I do not believe four-wheel drive is, in fact, sensible for dry racing on normal tarmac. You need very complicated transmissions of a torque splitting type, not only front to rear but from side to side, in order to make driving on tarmac a possibility. I think there is considerable scope in the design of a transmission to the wheels of a car and I think infinitely variable transmissions are the right way to go. Whether in fact the weight is acceptable is another matter. Possibly at 585 kgm, it ought to be, but if that is the only argument for having a minimum weight on a car, in order to permit heavy engines or heavy transmissions, then it is contrary to the spirit of the regulations. The only weight limit you should have on a car is so many times the weight of the fuel, engine and transmission, thus forcing the car itself to be strong. I do not believe in weight limits and therefore I think an infinitely variable speed transmission car should have to compete with one that is made as light as is possible.
There are obviously a whole pile of possibilities vaguely connected with transmissions, such as energy storage systems, that are very intriguing. They would cost a lot of money and would not necessarily improve the spectacle of motor-racing. Whilst I might be enthusiastic about them as a designer and as an engineering enthusiast, I think everybody should bear in mind that motor-racing exists to create a spectacle, to entertain the crowd; it is not just a pure technical exercise.
Equally, I think that Formula One is, in fact, a Drivers Championship and that to have a good Drivers Championship, the requirements are that the cars should be of equal potential and that Formula One should be a Formula that perhaps restricts technological development in the interest of producing competitive cars. And there is no need for them to cost too much either. I think with the introduction of a Manufacturers Endurance Championship in Group C, which has a very free engine regulation but is on a fuel consumption basis, then the technological developments should take place in that Formula rather than in Formula One.

Your engine has changed the whole approach to Grand Prix racing. Because of its availability to a relatively large number of constructors, racing car design has progressed at a pace that was previously thought impossible. What are your views on this development ?
Well, I think on a general front of racing it is the availability of a winning engine at a price that a large number of people can afford that has brought about the most competitive Formula One racing there has ever been. That has mode it possible to create the great spectator appel of Formula One. The separation of the problem from the cars and the fact that there were several people using it, meant that if other teams were winning, it was either the design of the car or the driver that was responsible. That was in the period when the tyres were the same for all. Concentration on the chassis purified the design and see-

→

Since our last issue, the victory total of the Cosworth DFV has gone from 148 to 149. Which driver will have the supreme pleasure of offering Keith Duckworth Number 150?

king to ontdo rivals, inspired things like the development of ground effect. That was a very clever thing to workout.
Ground effect is probably going to be a useful development for road cars because I think that if we streamline the top of cars, we are going to develop a lot of lift. If we manage to lighten the cars for fuel economy reasons, then the dangers of ordinary road cars having inadequate grip on the road at even modest cornoring speeds or even in high side winds, is very great and a certain amount of down force is probably going to be required on the road car of the future.

Unfortunately, I feel that from the drivers' and spectators' point of view, ground effect developed to the present extent is against the interests of the sport.
Therefore I am a great supporter of Balestre's intentions that down force should be drastically reduced. I hope that the reductions along the lines suggested by Colin Chapman. Reduction is along the limits sungststed by Colin Chapman. He wants the erta reduced so that whilst you can still develop quite low pressures underneath the car, the lack of area on which it will act will reduce the total down force and therefore reduce cornering speeds.
I think that it would be nice to have abolished skirts but I can see no way in which effectively policeable rules can be made to do it. All those people who said "stupid" and everything else should try and write a rule that will get rid of them. If they had any intelligence and looked at the rule they had just written they will find that it is stupid and that is the reason for the current impasse.
I think Colin Chapman's separately suspended set of side panels was, in fact, a useful development and I think it is unfortunate that it was banned. It was practical in that you have a gap between the skirts and the car, and could maintain your suspension movement whilst keeping the down force.

What is the present level of development and what is the potential for further increases in power output ?
Having previously stated that we had run out of valve area we are now seeking to increase it, clearly to do that we have to increase the bore and decrease the stroke and make it more like the competing V12. By having a greater valve area we should therefore be able to "up" the engine power stroke, run the engine faster and get more power. Whilst we are doing that we are likely to reduce the efficiency of the engine and our very good fuel consumption is going to suffer. I think there is a danger that we will make our fuel consumption 10 percent worse and gain about 3 percent in power.

You mentioned earlier that you were concerned about the inertial loadings of the engine but you are now proposing to increase the rpm. How will you reconcile these factors ?
Well, by reducing the stroke of the engine we effectively reduce the inertia loads so that we are, in fact, improving our conrod design. The crankshaft should be all right because the effective strength is being increased by reducing the stroke and the balancing of the crankshaft is more simple. So we feel that from that aspect we can run the engine faster. We are still trying to sort out the valve gear problems in running faster and those are by far the most difficult problems to tackle. At the moment the camshafts that enable us to run fast do not give us power, and those camshafts that give power break valve springs.

Because of your unique position within motor-racing, you are able to view the Grand Prix scene in a rather more dispassionate way than, say, a Constructor or a Team Owner. What is your view of the present situation and what do you see as the future ?
Well, the current situation of cars having normally aspirated engines that are supposed to be equivalent to those having turbo-charged engines with their huge power advantage is, I think, most unsatisfactory. I also think the turbo-charged engine in its Formula One guise is a very fuel inefficient engine. It is complex and the technology learnt is totally inapplicable to normal turbo-charged road cars.

An enormous amount of money is being spent, not to improve the spectacle but to contribute absolutely nothing of value to engine development. With the rules as vaguely worded as they are, obvioulsy the whole thing is hopeless. Whether anything can be done in a short term is doubtful.
I believe that perhaps the weight limit will be changed so that the inequalities might be reduced but my only hope is that we have a new Formula for 1985 and that the new rules are, in fact, simpler or better written in order to produce a more cost effective racing-car likely to show who is the best driver.

I have argued over a considerable period that the only fair way is to go to a fuel consumption based formula but the only one I can see that will not destroy racing is to use a certain number of cc's of fuel per second. So many gallons for the race is absolutely fatal. But I now feel that fuel per second will be too complicated for scrutineering purposes and liable to cheating. Possibly it is technology that will be better applied in the Manufacturers Championship in Group C than in Formula One for the reasons previously stated.
Therefore if we wish to see different types of engines compete in Formula One, the only concept is to have one type of engine that is intended to be the general basis of the Formula. Any other type of engine that comes into the Formula should be on an equivalence that can be changed, on a success basis, on the grounds that the winning is more likely to be through the equivalence being unsound rather than the engineering of that equivalence. I believe that if there is going to be any technological quantity in motor-racing then it should be an engine that is inherently better, or one in which the designers have done a better job rather than because an equivalence happened to favour one particular engine.

Fifteen years at it and nearly ten wins a season. The Cosworth DFV has put all the greats up on their podiums, from Jackie Stewart, above, to the lamented Ronnie Peterson below. But it fell to Jody Scheckter, in the middle, to score Number 100, at Monaco in 1977. As for Keith Duckworth, the fantastic success of his V8 has put him on a pedestal of his own: as the finest engine designer of all time.

Will you be able to satisfy the future demand for an independant racing engine ? One that is freely available to all. I get the feeling that everybody thinks that they need a turbo-charged engine in order to give them competitive horse-power.

The problem at the moment is that the whole of the motor-racing rules are in a mess. Although they have a Concorde agreement saying the rules cannot be changed until the end of 1984, in practice it is impossible to determine what the rules mean. The turbo-charged engine, for instance, is illegal within the rules as written and should not be in Formula One.
If you say that the current turbo-charged engine is legal, then all kinds of engines — like compounds — are also legal, as is the Comprex super-charged 3-litre engine. These would give rise to horse-powers of 1,000 and greater. As soon as we did it, it is likely that they will be banned on the grounds of safety or some other reason.
It is unfortunate that politics can determine what the rules mean rather than an interpretation of the rules. So, as the FIA Appeal Court has recently made some judgement on the spirit of the regulations, perhaps a challenge on the eligibility of the turbo-charged engine will result in that being declared illegal. The turbine in the turbo-charger that drives the compressor is clearly another engine. Having got a capacity that was measurable, everybody would have said that the 1500cc should include the engine that was driving the super-charger's compressor. Therefore, you could not have an independent engine like a turbine unless the notion of equivalent capacity for the turbine was estimated and subtracted from the 1500cc of the engine. The rules are very close to being meaningless and it is, therefore, impossible and commercially disastrous to make a turbo-charged engine.

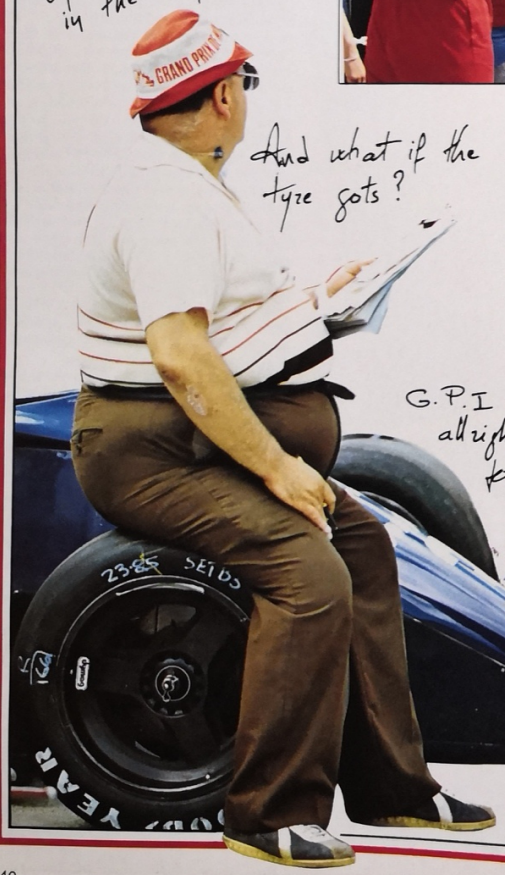
Well, that has really taken us up to my next question which is to ask your views on present Grand Prix engine designs.
Of the engine designs that are around at the moment — well, I took at the turbo-charged engines and whilst I think that it has been a very bright piece of development to have got to where it has, to practice it was an engine that was not designed for Grand Prix racing. It was not even designed to be turgo-charged and I think that it is unreasonable that the equivalence formula should be so bad that an engine that was essentially just picked up from the floor could be so modified as to be a winner. One would have said that within the rules somebody should have made a V12 turbo-charged engine. We would now have over 800 h.p. and have stop to request.

One final question and one that you and I have discussed many times in the past — will there be another Cosworth engine ?
Yes, there will be certainly more Cosworth engines. I presume you are referring to a Cosworth Grand Prix engine. I would say that if the rules for 1985 are at all sensible, then there will be a new Cosworth engine for 1985. □

Postcard from Brands Hatch

Upside down is ok. in the sky.

Even on the ground: helicopter pilots have the best view.

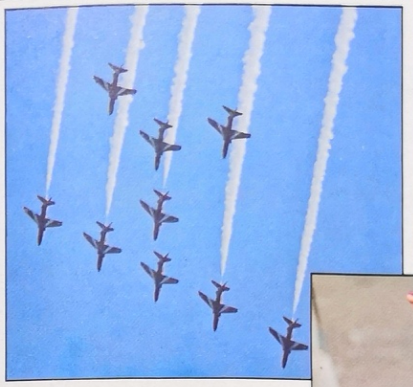


And what if the tyre gets?

G.P.I. did all right: full marks for elegance and charm...

UNIPART
SUPER
MULTIGRADE
MOTOR OIL
HUILE MOTEUR
MOTORENÖL
SAME ONE.

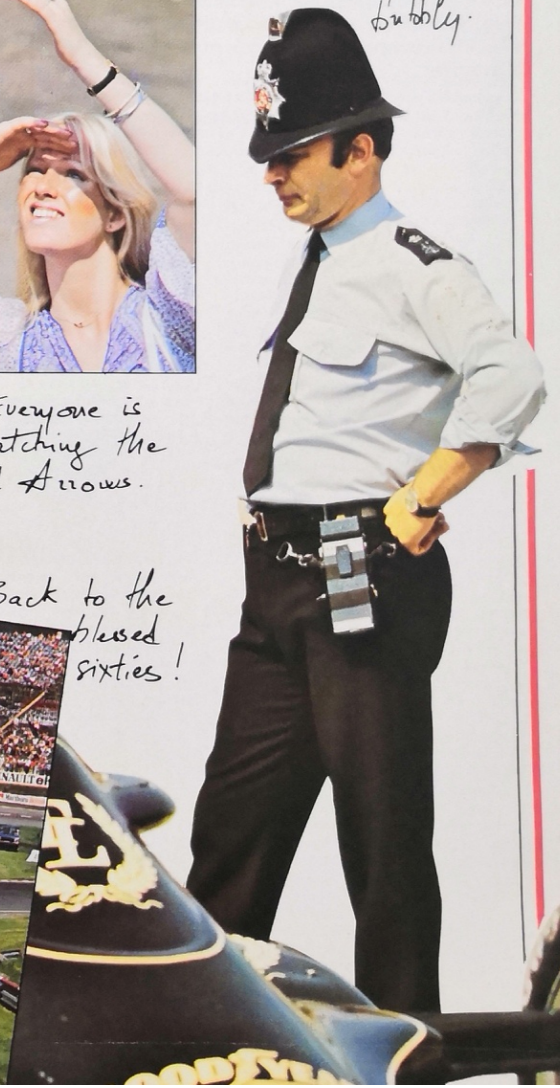
Postcard from Brands Hatch



Keke's pole position is worth 100 bottles of the bubbly.

Everyone is watching the Red Arrows.

Back to the blessed sixties!



FERRARI AT PEAK

In its second year, the V6 turbo-powered Ferrari 126 finds itself contending for the top spot — and that despite the tragic disappearance of its most effective driver, the Canadian ace Gilles Villeneuve. The Dutch Grand Prix, two weeks before the British, marked an important stage in its development on two counts: firts, the promising debut made by the Scuderia's new driver Patrick Tambay; and second, by the affirmation of the progress made with the aluminium honeycomb chassis built with the technical assistance of British engineer Harvey Postlethwaite..

by Giorgio Piola

Whatever the outcome of the World Championship, 1982 will remain an important year in Ferrari's technical development. It has been the year in which two of the fundamental characteristics of their cars have been altered: first the old "aero" method of chassis construction and, second, the transverse-mounted gear-box.

In the South African issue of GPI, the transition between the semi-monocoque 126C of 1981 and the fully-integrated monocoque of the 126C2 of 1982 was examined in detail but the return to a fore-and-aft mounting for the gear-box is brand new. The transverse gear-box first appeared in the 312T in 1975. Apart from a few experiments by Brabham with the Weissmann gearbox, no one followed Ferrari down this particular road. The 312C's gearbox was designed to unclutter the rear and to reduce the overhang behind the wheels. It was modified and narrowed last year to improve the air flow at the rear of the car, which was an area much explored by other leading teams, who mounted their Hewland mechanical parts in special narrow casings. But the air flow to the rear has become such an important element in a ground-effect car that Ferrari has been forced to return to a 'classic' gearbox, one that is which is mounted fore-and-aft.

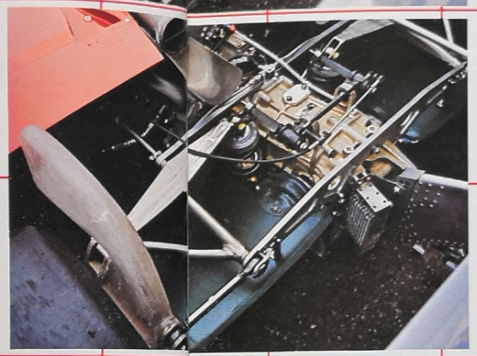
The advantages of this mounting are its narrowness and its lack of overhang; both produce a better weight-distribution. Its chief advantage, however, is that the crank-case with its gear-wheels is now up front, just behind the engine and ahead of the rear wheels. This mounting is made possible on the old 126C2 with its transverse mounting by increasing the wheel-base/by some 20cm.

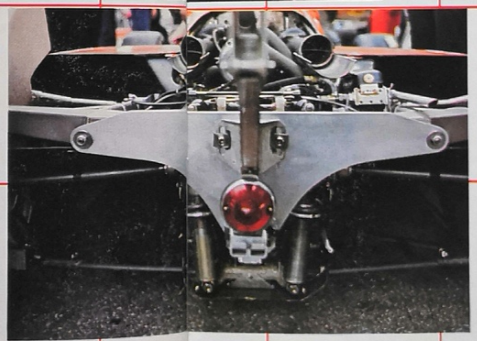
This lengthening should provide better road-holding on the super-fast circuits while slightly worsening the drive characteristics. But the new techniques involved in the latest version of the 126C2 are not limited to the super piece of casting represented by the new gearbox; both the suspension and the chassis have been significantly modified.

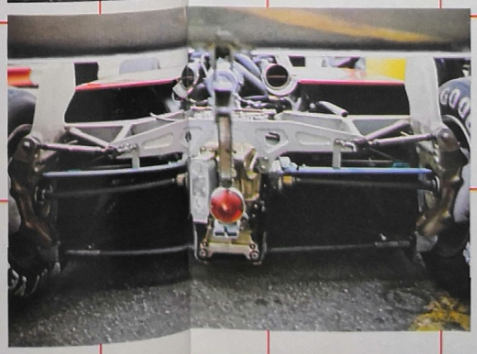
The front suspension is derived from the one which made its first appearance at Detroit and Montreal. Its main characteristic is that it replaces the traditional rockers with Brabham/Ligier type "push-pull" links. and is fitted with a 'rising-rate' suspension which links the front wishbone to the bottom shock-absorber mountings, a ith Williams, Ligier and Tyrrel. The two main advantages derived are greater rigidity in the suspension itself and better aerodynamics at the front of the car. The chassis has been modified and reinforced to the rear to adapt it to the new suspension, and the wishbone mountings are a completely new type.

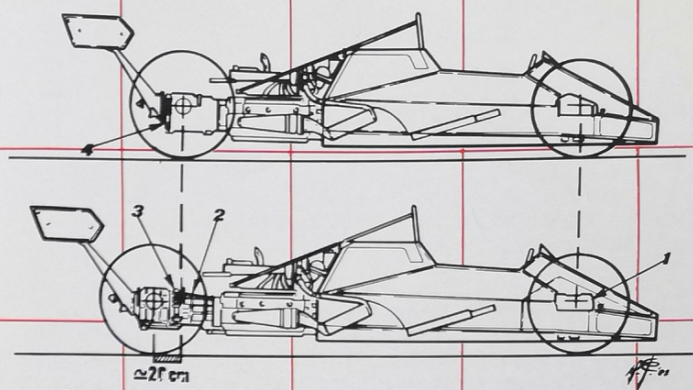
Obviously the new gearbox mounting has required a total rearrangement of the rear suspension, whose upper arms and shock absorbers are now placed forward of the drive-shaft, on each side of the gearbox. They were formerly located right at the back. These modifications have substantially improved the under chassis, which is now narrower and allows for a better air flow under the car. Total weight is also reduced: supposedly it is now around the 580 kg limit. No Maranello car has ever managed that before.

As for the engine; the water-injection system is being further developed and has already resulted in a reduction in pinking and improved the life of certain highly stressed components. In pinking and improved the life of Internal temperatures have been substantially reduced, notably those inside the cylinders and turbine.



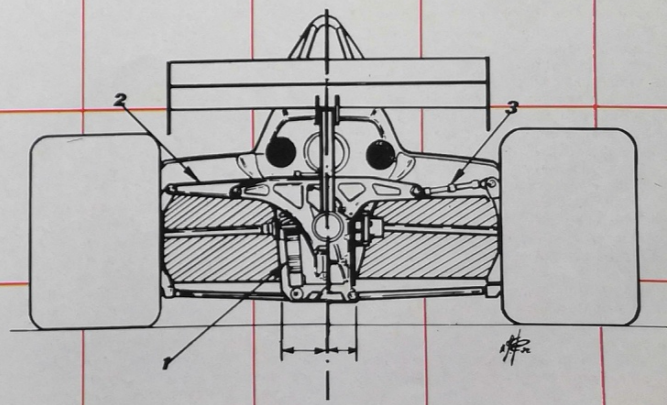






Side view
The older version of the 126C2, with its transverse transmission, is shown at the top of the page. Note that the later car (below) has a longer wheelbase (about 20 cms) as a result of adopting the fore-and-aft gearbox. The latest chassis (060) has modified suspension mountings to improve the accuracy of such wheel movement as these cars still have: instead of the previous solid rocker arm, it now uses a wishbone-type layout with tie rods. The new gearbox itself (2) is now mounted almos completely outboard, with the differential in the more conventional forward position immediately behind the engine. The shock absorbers (3) are now virtually flush with the gearbox casing, instead of in the less satisfactory place alongside the old wider transmission.

Rear view
The improved aerodynamic airflow which results from the adoption of the fore-and-aft gearbox can be seen in this rear view drawing (the older version is shown on the left side of the drawing). Note the new mounting for the shock absorbers, which were previously in the airstream alongside the gearbox (1). Now they are placed further forward. The older car's rear suspension utilised a solid top rocking arm (2), while on the new car this arrangement has been replaced with more conventional and lighter double links, the rear member being shown in (3).

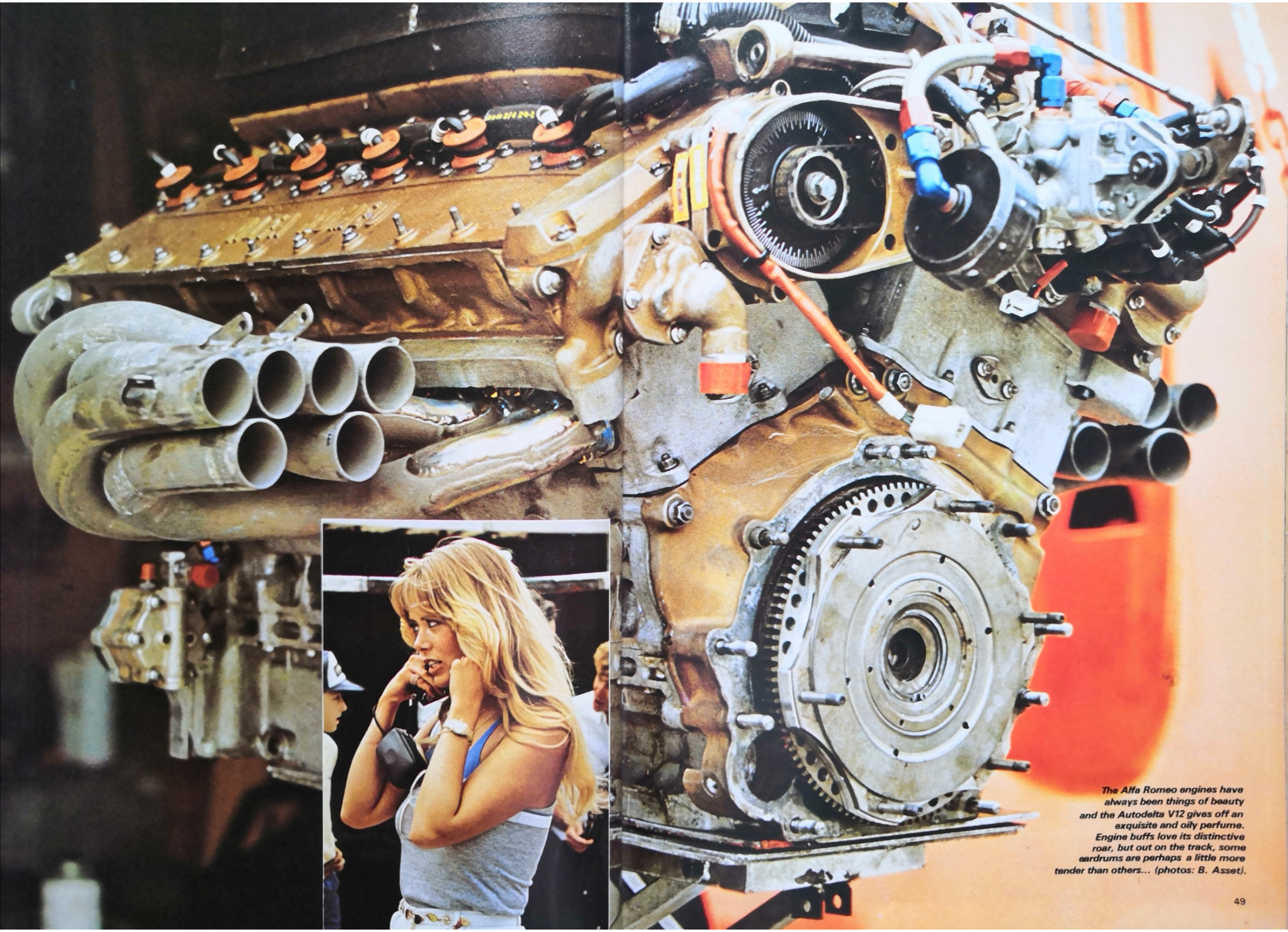


DRUID MAGIC

Druids is one of Brands Hatch's most famous bends; it is slow enough to make it a public favourite. It is where the cars take each other's measure on braking and the driver who can come out of it fastest and get Paddock just right has the upper hand. As you come out of Druids, however there is only one way to go. De Cesaris, Warwick, Alboreto, Giacomelli and Prost know it full well and they line up to plunge down into Surtees and take up the fight.

KEKE'S NIGHTMARE

Rosberg was on pole from Friday on and Brands Hatch looked like being his first ever victory, an easy one at that. But the superb Williams had an off day. The horrors started just as the cars set off on their warm-up lap when Keke's car refused to start. He was relegated to the back row. All his work thereafter was sheer wishful thinking, for first his tyres and then his fuel feed went off... (photos: B. Asset).



The Alfa Romeo engines have always been things of beauty and the Autodelta V12 gives off an exquisite and oily perfume. Engine buffs love its distinctive roar, but out on the track, some eardrums are perhaps a little more tender than others... (photos: B. Asset).

NEXT TIME...

When he put in the second under 76-second time after a fabulous attack on Saturday, Riccardo Patrese had Gordon Murray in buoyant spirits. The race looked a certainty. After all, he had his special refueling system all set up. How could Brabham fail ? Alas ! the gods of fortune and the fortunes of the race frowned on Murray and the much-anticipated «Indy Show» never came off. It's more a postponement than a cancellation...
(Photos : B. Asset)

CATCHING RELIGION...

The British Grand Prix is a sacred rite, whether at Silverstone or Brands Hatch. At the latter some 150,000 of the faithful, divided into their various persuasions, showed up to honour their gods. Were a real one to descend, would he even be noticed ?

(Photos: J. Cochin)

After his frustrations at Zandvoort, Patrick Tambay turned in an exceptional race at Brands Hatch, a race full of verve and brio, all the more praiseworthy because he had severe road-holding problems. Finishing third behind team-mate Didier Pironi and the inaccessible Niki Lauda, for the first time in his career Patrick had the pleasure, plainly visible, of mounting the steps to the podium.
(Photos: DPPI and B. Asset)

EXTRA, EXTRA

WHEN EVERYTHING GOES WRONG

What had looked like being such a great race for Keke Rosberg turned sour before it had even started, but the fighting Finn still put up a show to remember. His father, who had come from Finland specially to watch it, must have been proud of his son; the two watched the finish side by side.

"It went wrong when we ran the hardest - compound tyres in the morning warm-up. We hadn't used them before then and the car was understeering badly. We changed the settings for the race, but it was still as bad. My tyres started to blister after five laps and even if I hadn't had the fuel vapourisation problem at the start of the race I would never have been able to stay up front," said a still smarting Rosberg.

But Keke is resigned to the little ideosyncrasies of racing that can turn a day of hope into one of disaster. *"The car is very fast, but just too difficult to set up. When one sixteenth of an inch on ride height can ruin your day, it's hard to get it right. Now it's one-to-one. I messed up Monaco and the team got it wrong here."*

After thinking that this race, and a fine practice performance which had put him on pole, would give him his first ever Grand Prix victory, the blow fell. Even after having to start from the back of the grid, Keke was still confident that something could be salvaged in 76 laps.

"When I came through the field I gave it all I could, taking every chance to overtake I could get. When I was up to seventh place and Niki still only had 23 seconds on me, I thought I could still win. But then when the front tyres began to blister I had to stop. When the hardest tyres Goodyear have blister, you know it's more than just a surface problem with the tyres. I had no choice but to stop and change them as I was afraid they might go altogether through one of the fast turns.

"This was my best chance all year to win and we blew it. Now, with the tracks coming up, I will never have that chance again until maybe Vegas and that's a long way off."

Rosberg might not have a lot to show for his weekend of hard work at Brands — Frank Williams took his 60 percent share of his pole-winner's champagne — but as his helicopter whisked him over the heads of the crowd below he had left behind a part of himself in the hearts of the thousands of racing fans who shared his day of disappointment: they wanted to see that first GP win under his belt as much as he did.

Jeff Hutchinson

BRABHAM'S SURPRISE PIT STOP PLAN

Bernie Ecclestone has consistently warned that the arrival of the turbo engine in Formula 1 is going to overturn long-established ideas. Typically, it was his own team, Parmalat-Brabham, which arrived at Brands Hatch with the inclination (and the expensive equipment) to use turbocharging to its best and most spectacular advantage.

The plan was simple. Start both cars (Piquet and Patrese) with their fuel tanks half full, with soft high-performance tyres. Weighing as much as 100 kg less than rival cars, the two BT50s would have been able to build up a big advantage — more than the 40 seconds which it would take to slow down, refuel, fit fresh tyres and rejoin the circuit. In tests at Donington, using special equipment, the Brabham mechanics had got the job of pressure-filling the cars with 100 litres of fuel, and fitting four fresh tyres, down to about 12 seconds. Gas heaters had been made to warm the tyres to working temperature and save even more time.

"Naturally, we thought of this idea a long time ago," said Renault's Jean Sage. *"It didn't seem practical at the time. We will be very interested to see if Brabham can make it work."*

The plan could not be used, however. Patrese's first gear jumped out of engagement when he released the clutch at the start, starting an accident which eliminated him, while Piquet retired when a pulley fell off a shaft and the belt to the metering unit slipped off before he'd reached half distance.

But the plan will definitely be used again, for the team has made a big investment in its pit stop equipment, which includes expensive fire-proof suits for 12 mechanics. If the rules concessions which have been offered by the "grandee" constructors for 1983 prove acceptable to the rival FOCA teams (a possibility which presently seems unlikely), then the Brabham system will become obsolete, because among the suggestions is a ban on refuelling during a race.

Perhaps Mr Ecclestone is trying to prove a point... □

EXTRA, EXTRA

HART'S FLAME THROWERS ON THE WAR PATH

"The Hart turbo engine is producing lots more power. There is much less throttle lag. And the new narrower Pirelli tyres are now really competitive. The only thing we need to get among the leaders all the time is our new chassis."

Nonchalantly stretched out in his racing overalls inside the huge Toleman Group transporter, a smiling Teo Fabi spoke about his hopes for the future, keeping a wary eye open for the approaching RAF Harrier, noisily demonstrating its vertical take-off ability next to the Brands Hatch pits. Teo had set 15th fastest practice time in official qualifying, and this morning he had done 5th fastest time overall in the warm-up. Had the car really been in race trim?

"Yes, well we think so. We're a bit worried that the tyres we had chosen won't last 76 laps, so we're probably going to look for something a bit harder. But I was running with full tanks, I promise..."

The pint-sized Italian looks calm and confident. It seems that the horrors of the early part of the season are now a thing of the distant past.

"After failing to qualify so many times, I had almost lost faith in myself. I started to think that I had made completely the wrong choice by aiming for an F1 career instead of taking up the offers of some good drives in the USA after doing well in the Can-Am last year. Even at Zandvoort, where Derek Warwick demonstrated just how quick we were, I hadn't been able to get into the race. I had been given a brand new chassis which was almost impossible to get sorted out, it just wasn't going right. Today, though, I think the non-qualifying days are well and truly over".

Indeed, Teo felt confident about doing well in the race. *"We're going to turn down the turbo boost slightly, mainly because this is a long race and we have to go easy on the fuel consumption. I'm a little bit uneasy about engine reliability, because we're short of spare Hart monoblocs and we've had to put some fresh engines on one side in order to be ready for the Franch GP, which is only one week after Brands. My race engine has already done two days of timed and untimed practice..."*

Unfortunately there was no opportunity for Teo to test the durability of his high mileage engine. When Patrese's car stopped on the startline and was hit by Arnoux's Renault, the French car's errant front wheel rolled into the path of the Toleman-Hart. With the front of his car damaged, a disbelieving Fabi was forced to park on the grass a few yards down the track.

Happily, for once there was another Toleman in the field for the Oxfordshire team to cheer onwards. Only 0.033 second slower than his team mate, Derek Warwick had better luck with his start from the eighth row of the grid. He was already up in 11th place at the end of the first lap, ready to gobble up Tambay's Ferrari. There was no stopping him next time round, and he followed up by doling out the same shock treatment to Prost's Renault on lap three. Then it was the turn of the two Alfa Romeos: a couple of laps watching for an opportunity to find a safe way past, then he was through. Still only lap 7 and already Derek was in a points-scoring position!

Five laps later it was the turn of Lotus driver Elio de Angelis to be overtaken. Less willing to be taken was the Williams of Derek Daly, who put up a strong resistance for seven laps. Ahead of the Toleman's ungainly looking nose now was no less a light than Niki Lauda in his McLaren and Didier Pironi's Ferrari, acknowledged to be the most powerful turbocar of all. With 26 laps gone, Derek was ahead of Pironi: amazingly, the British poor man's turbocar had blown off its Renault and Ferrari rivals.

Second place: could this be true? With the Toleman looking good, and its engine sounding strong, could Warwick possibly be able to challenge the leader, Lauda? Maybe the McLaren's tyres wouldn't last in this heat. Almost 150,000 spectators hearts beat in sympathy with the gruff-sounding Hart turbo motor. But the fairy-tale lasted only until lap 41, and then it crumbled as suddenly as it had been created.

"Going into Druids, the hairpin, I felt a slight vibration," said Warwick, still sweating. *"When I tried to put the power down I could feel that something had broken at the back. We think it may have been a CV joint".*

In the calm and comparative quiet of the Toleman truck, in the very same place where Fabi had spoken before the race of his emotions and hopes, Warwick was getting changed, a bath towel in his hands. The race was still not over, and on the other side of the pit wall its final scenes were being played out in a frenzied fight for 3rd place between de Angelis, Daly and Prost. Derek had overtaken all three of them not long before, with obvious ease.

Despite his disappointment and fatigue, the Englishman replied happily to all the questions being fired at him. *"The engine was fabulous. Forty laps into the race it felt perfect: the turbo boost pressure, the temperatures and the maximum revs were just as good as they had been at the start. The chassis was sitting nicely on the road. I honestly felt that I could have pulled it off. The only thing that had gone wrong was that I had missed a gear-change once..."*

With his customary frankness and still playing with his towel, Derek didn't forget a detail: *"After 20 laps or so I was starting to get a bit tired in my neck and arms. But it wasn't serious: a few laps later everything felt fine again, I was ready to charge."*

Needless to say, everyone wanted to know how it felt to tackle Pironi's Ferrari and overtake it. *"It was fantastic. My car really was better than his all around the track, and I slipped past under braking. Maybe he had a problem of some kind, because he was very slow coming out of Druids: his engine wouldn't pick up, almost as though he was having a lot of throttle lag. I was also quicker on the straight, not much but enough: inch by inch, I was able to reel him in..."*

What a contrast! Surely the sight of the heavy and unlovely Toleman blowing off the gorgeous red racer, built so lovingly by the Scuderia, will remain for many years in the minds of the British fans. Did Derek think he could have held on to 2nd place?

"At the time I was sure that I could. Now, looking at the state of that left rear tyre, perhaps I'm wondering..."

The TG181C has been rolled back into the garage behind us, and its not difficult to see the suspect strip of darkened rubber around its rear wheel. *"Actually, I couldn't feel anything going off while I was driving. We'll probably never know the answer now..."*

Until the new carbon-fibre Toleman monocoque chassis is ready — probably in time for the Italian GP — Warwick will have to make do with the old and hitherto unloved model. It doesn't worry him at all, though: *"the next four or five circuits are going to be perfect for turbocars... it should be good!"*

And now there's no doubt about it. From this moment on, the "flame throwers" have become a force to be reckoned with...

Didier Braillon

NELSON'S COLUMN

It seemed like such a good idea to choose Brands Hatch for the debut of our new "pit stop" tactics. To begin with, most of the press and the other teams thought we were joking. Then, on Saturday night, when they saw us bring all our extra equipment out of a lorry in the pit lane, they knew we were serious. There were special fuel churns with bottles of compressed air to force the petrol into the tank. We had two special boxes made for the tyres to go in so that they could be heated. We even had special fire suits, just like the mechanics wear at Indianapolis, for our boys to wear in case there was an accident.

We even had coloured tape stuck in the pit lane so that Riccardo and I would know exactly where to find our refuelling point.

Brands Hatch was a good circuit for our plan. It has a nice, wide pit lane which could be approached very fast. Since it was going to be one of the longest races of the year, we knew that we would be able to get the maximum advantage. And it would provide a super spectacle — two very slick pit stops, plus an exciting chase back with lots of overtaking — for the loyal British fans who support us so well.

Of course, it didn't work out like that. Poor Riccardo probably didn't engage first gear completely on the start line, so when he let out the clutch the gear jumped out and he was stuck on the spot, where Rene Arnoux hit him very hard. They were both eliminated.

But for a little while (well, nine laps), my car was going fabulously well. With only half its normal starting load of fuel, and softer Goodyears than we would normally have chosen, it was really quick. I was pulling out about 1.5 seconds every lap on Niki Lauda in second place, and a quick calculation suggested that by half distance I would have more than enough time to make my stop for fuel and fresh tyres, then to get back into the race before Niki passed me.

Well, it didn't happen. On lap 10 the engine just stopped without warning. A pulley in the belt which drives the metering unit had pulled off its shaft, the belt had fallen off and my race was over. It was nothing to do with the special arrangements for our plan: it would have happened even if we had run the race in the normal way.

Unfortunately, the problem with the pulley is not exactly new. Exactly the same thing happened to my engine at Monte Carlo. Obviously we hope that the BMW engineers will now do something to prevent it happening again.

I am sure that we will be able to use these tactics again this year. Not all the circuits are suited to quick pit stops, though, but it is a very good way of compensating with our power advantage for the better consumption of the non-turbo cars. It should also give us an edge over the other turbo teams, who have much heavier cars. Well, maybe I should mention that the new Toleman-Hart is going to be very light also. The old one seems to be quite quick, at least to judge from the way it went rushing past Pironi's Ferrari at Brands...

Our boys have put a lot of effort into our pit stop equipment. They believe in it just as much as I do. It makes me very proud to be associated with a team which is as innovative as Gordon Murray and his crew. They were responsible for the famous "fan car," then (last year) for the first automatic ride height correction system, which was also the only really legal one, incidentally.

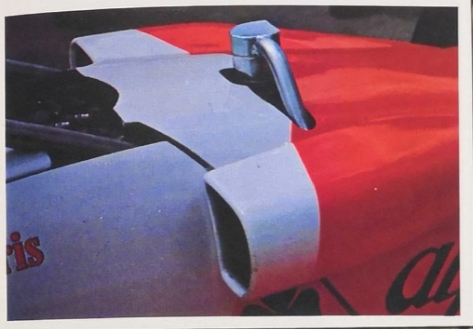
You may remember that people laughed at us when we persevered with the BMW turbo engine. They laughed at us when they heard about our pit stops. I wonder if they'll still be laughing when we demonstrate that it works and can win races...

Nelson Piquet

ALFA ROMEO

182/1: Bruno Giacomelli (I)
182/5. Andrea de Cesaris (I)
182/3: T-car

Three standard 182s. The celebrated "B" version has been virtually abandoned because of the very heavy workload on the small Autodelta team in maintaining the regular cars. They are also devoting a lot of time to the forthcoming turbo car. The three cars were unchanged for Brand Hatch apart from plastic trunking inside the sidepods to take fresh air to the transmission joints where they exit the gearbox. Chassis 182/1 was wrecked when Giacomelli went off on Saturday morning after the rear wing support ruptured at its base. It was strengthened on the other cars for the final timed session. An engine cover with two lateral air intakes was tested on Friday morning, without success.



ATS

HGS1/03: Manfred Winkelhock (D)
HGS1/03: Eliseo Salazar (RCH)
HFS1/04: T-car

No modifications as the team is still overcoming the problems imposed by the dramatic series of accidents in Detroit and Montreal.

Neither car managed to qualify despite the best efforts of the drivers. A narrower front track is to be used at Paul Ricard.

ARROWS

A4/1: Marc Surer (CH)
A4/5: Mauro Baldi (I)
A4/3: T-car

Alan Rees now says the new A5 will be more likely to appear in Austria than at Hockenheim. In the meantime, the front suspension of the A4s has been modified to lighten the steering.

BRABHAM

BT50/03: Nelson Piquet (BR)
BT50/04: Riccardo Patrese (I)
BT50/02: T-car

The three BMW-engined cars again had the injection system tested at Zandvoort and the T-car again had carbon fibre brake discs. The three cars had modified fuel tanks inlets in the right side of the bodywork, and in-built jacks — a large one under the rear wing support and two small ones under the bodywork level with the front suspension. Already weighing 590 kilos without these extras, they thus had a new weight penalty, but the cars were prepared for a fuel and tyres stop during the race. The idea was that Piquet and Patrese should start with tanks only half full, using that weight advantage — and the softest possible tyres — to build up a lead that would make a pit stop viable.

Cockpits

ENSIGN

N181/1 (16): Roberto Guerrero (COL)

At Donington, the team tested a new front suspension reducing the wheelbase, and also a narrower rear track, without great success, so at the race the N181 had only minor geometry changes. It had new skirts and the big problem was excessive porpoising which made the car very tricky to drive. Nigel Bennett had worked in the windtunnel between Holland and Britain to try to resolve this problem, trying 10 different aerodynamic configurations.

SEFAC FERRARI

126C2/061: Patrick Tambay (F)
126C2/060: Didier Pironi (F)
126C2/059: T-car

The engines have been lightened to weigh 10 kilos less than at the start of the season, which puts the 126C2 at the minimum weight limit or possibly under it. There were two different rear wings, the single aerofoil which appeared at Zandvoort, and the three-wing model. The two cars with transverse gearboxes had rear suspensions which were of different technical construction but of unchanged geometry.

FITTIPALDI

F8D/5: Chico Serra (BR)
F8D/3: T-car
F9/1: T-car

No changes to the two old F8Ds because the new F9, which will be described in detail in the next edition of GPI, has at last appeared. It was tested for the first time at Donington just before practice at Brands Hatch with bodywork only cobbled on, and did not come out at Brands until Saturday morning. The monocoque is similar to the F8D but much more rigid, and the weight can be reduced to 565 kilos if necessary. The conventional design carries Brabham-type suspensions, and the engine and driver are very far forward with a long spacer having been installed ahead of the gearbox. Designer Ricardo Divila was assisted by Tim Wright when the car was being drawn.

McLAREN

MP4/1B-05: John Watson (GB)
MP4/1B-06: Niki Lauda (A)
MP4/1B-07: T-car

No changes, the spare car being a new chassis 07 identical to its predecessors.

OSELLA

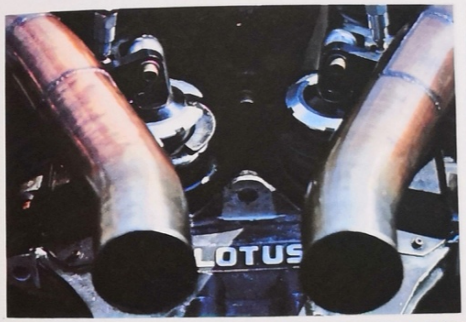
FA1C/04: Jean-Pierre Jarier (F)
FA1C/01: T-car

The front suspension geometry of the Osellas has been reworked and Jarier tried a new three-piece rear wing. The new suspension designed by Hervé Guilpin and which appeared for the first time in Holland has been retained.

LOTUS

91/8: Elio de Angelis (I)
91/7: Nigel Mansell (GB)
91/5: T-car for de Angelis
91/6: T-car for Mansell

91/5 which has not been at the last few races was back, modified with a Brabham-type rising rate front suspension. The chassis had to be modified for the system and the shock absorbers are located differently, completely inside the car. The three other 91s were in their Zandvoort set-up with the ultra-short wheelbase created by the construction of a fourth adjustment point on the classic front suspension.



RENAULT

RE30B/06: Alain Prost (F)
RE30B/09: René Arnoux (F)
RE30B/05: T-car

As chassis 7 was destroyed in Arnoux's accident at Zandvoort, a new chassis, number 9, was brought to Britain. Like the others it has reinforced lower front wishbones because it was a failure there which caused René's front wheel to come off. The cooling air intake for the fuel pump has been modified.

MARCH

821-RM11: Jochen Mass (D)
821-RM10: Raul Boesel (BR)

Emilio de Villota has wisely decided to call it a day, so there was no RM07 for him, and no spare RM08, which was destroyed by Boesel in testing at Donington early in the Brands week. The two Marches had new front and rear suspensions with wider tracks and a wheelbase 7 cms longer. The radiator air intakes in the sidepods were modified and the bodywork, featuring spoilers ahead of the rear wheels, is now in two parts instad of being a single moulding. Boesel, who went off in the final session, failed to qualify.

Cockpits

TALBOT LIGIER
JS19/01: Eddie Cheever (USA)
JS19/03: Jacques Laffite (F)
JS17/05: T-car for Cheever
JS17/04: T-car for Laffite

The two old faithfuls were brought because of the continuing problems with the JS19.
Chassis JS19/03 was new, replacing 02 which was damaged at Zandvoort. The big problems is still the airtightness of the skirts, of a new model made by Peugeot's steel and machinetool division, and which were on different supports. Recent work at Hockenheim, Dijon and Paul Ricard was confined solely to setting up springs, rollbars and shockers in order to get the best value from the existing downforce. The exhausts have been changed from their lateral position behind the rear wheels to become "classic," at the request of Matra. Optimal exhaust harmonics were not possible with their extreme length and the "bits" of the V-12 suffered. While Laffite only used the JS19, Cheever switched between the two models and finally squeezed onto the grid on Saturday afternoon using the older car.

THEODORE
TY02/2: Jan Lammers (NL)
TY02/1: T-car

The TY02s had new sidepods with a different profile and made in a single piece, and the rear wing was entirely in carbon-fibre. Lammers failed to qualify when his engine broke on Saturday afternoon.

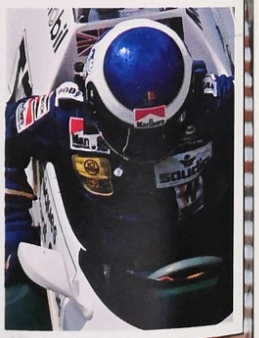
TOLEMAN
TG181C/6: Derek Warwick (GB)
TG181C/8: Teo Fabi (I)

No changes since Zandvoort. The new car is to be tested in Britain and at Monza just before the Swiss GP at Dijon and is expected to appear for the first time at a race at the Italian GP. The Hart engines have a new cooling system designed by the Italian company Diavia. It is possible that Brian Hart, who is said to have spent over £1 million since the start of his F1 programme, may supply his four-cylinder engine to several teams, including Toleman of course, in 1983.

TYRRELL
011/5: Michele Alboreto (I)
011/2: Brian Henton (GB)
011/1: T-car

The 011s were back in their pre-Zandvoort configuration with the old sidepods. The narrow front track created for Holland had disappeared and the increased width was obtained by spacers between the hub-carriere and the wheel. The only other modification was the use of new roll-bars.

WILLIAMS
FW08/4: Derek Daly (IRL)
FW08/5: Keke Rosberg (SF)
FW08/1: T-car



The only change was the adoption of an air intake to cool the fuel pump. Rosberg's pole-position was attributed to the fact that the car, initially designed as a six-wheeler, does not take kindly to slow corners — and there is only one at Brands, the hairpin at Druids.

SOLITUDE AND THE CROWDED SKIES

Keke's Williams was always in a crowd, but Derek Daly had his moments of solitary grandeur.
There was no solitude in the crowded skies: Concorde flew by, a Harrier hovered and the Red Arrows did their own sky-dice.

TALBOT LIGIER
JS19/01: Eddie Cheever (USA)
JS19/03: Jacques Laffite (F)
JS17/05: T-car for Cheever
JS17/04: T-car for Laffite

The two old faithfuls were brought because of the continuing problems with the JS19.
Chassis JS19/03 was new, replacing 02 which was damaged at Zandvoort. The big problems is still the airtightness of the skirts, of a new model made by Peugeot's steel and machinetool division, and which were on different supports. Recent work at Hockenheim, Dijon and Paul Ricard was confined solely to setting up springs, rollbars and shockers in order to get the best value from the existing downforce. The exhausts have been changed from their lateral position behind the rear wheels to become "classic," at the request of Matra. Optimal exhaust harmonics were not possible with their extreme length and the "bits" of the V-12 suffered. While Laffite only used the JS19, Cheever switched between the two models and finally squeezed onto the grid on Saturday afternoon using the older car.

THEODORE
TY02/2: Jan Lammers (NL)
TY02/1: T-car

The TY02s had new sidepods with a different profile and made in a single piece, and the rear wing was entirely in carbon-fibre. Lammers failed to qualify when his engine broke on Saturday afternoon.

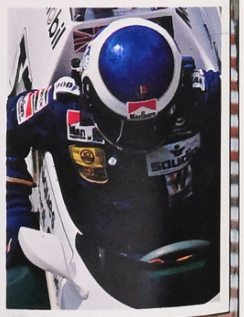
TOLEMAN
TG181C/6: Derek Warwick (GB)
TG181C/8: Teo Fabi (I)

No changes since Zandvoort. The new car is to be tested in Britain and at Monza just before the Swiss GP at Dijon and is expected to appear for the first time at a race at the Italian GP. The Hart engines have a new cooling system designed by the Italian company Diavia. It is possible that Brian Hart, who is said to have spent over £1 million since the start of his F1 programme, may supply his four-cylinder engine to several teams, including Toleman of course, in 1983.

TYRRELL
011/5: Michele Alboreto (I)
011/2: Brian Henton (GB)
011/1: T-car

The 011s were back in their pre-Zandvoort configuration with the old sidepods. The narrow front track created for Holland had disappeared and the increased width was obtained by spacers between the hub-carriere and the wheel. The only other modification was the use of new roll-bars.

WILLIAMS
FW08/4: Derek Daly (IRL)
FW08/5: Keke Rosberg (SF)
FW08/1: T-car



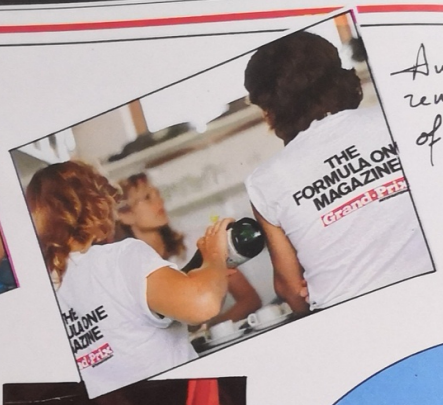
The only change was the adoption of an air intake to cool the fuel pump. Rosberg's pole-position was attributed to the fact that the car, initially designed as a six-wheeler, does not take kindly to slow corners — and there is only one at Brands, the hairpin at Druids.

SOLITUDE AND THE CROWDED SKIES

Keke's Williams was always in a crowd, but Derek Daly had his moments of solitary grandeur.
There was no solitude in the crowded skies: Concorde flew by, a Harrier hovered and the Red Arrows did their own sky-dice.

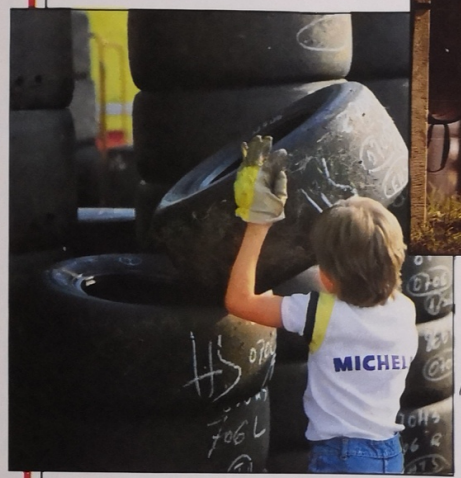
There were attackers and defenders: of order and tradition. Alongside a fascination with the new, F1 has, especially in Britain, a nostalgia for the old. As for Rosberg, he attacked... and attacked and attacked, to no avail.

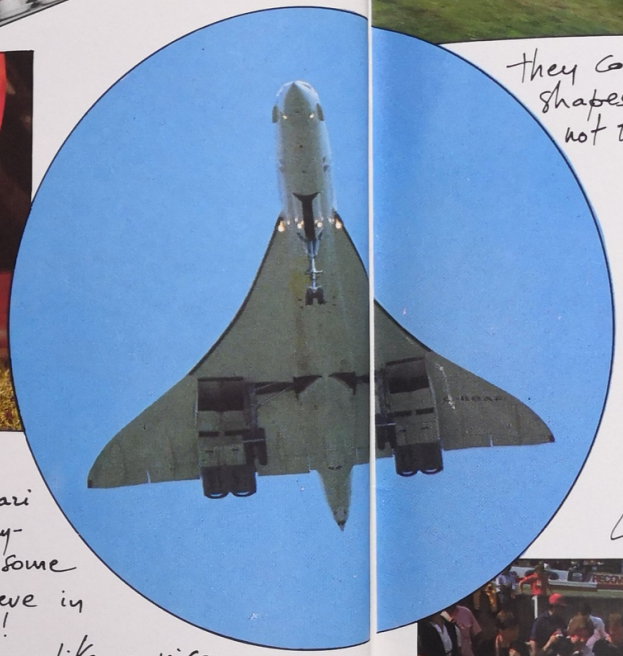
Postcard from Brands Hatch



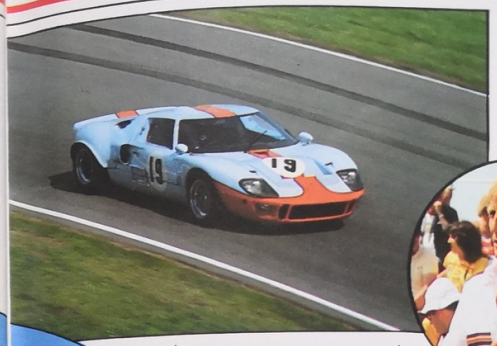
And reminiscences of Le Mans

Front and back covers...

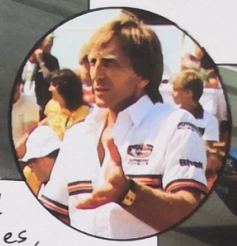




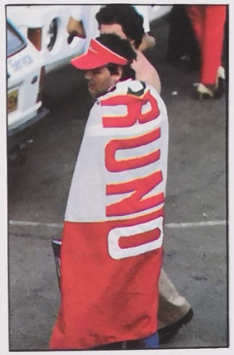
Kids get in the act, Ferrari fans are everywhere and some people believe in camouflage! Wouldn't you like a nice co-driver. Why ever did F.1. go to a single seater?



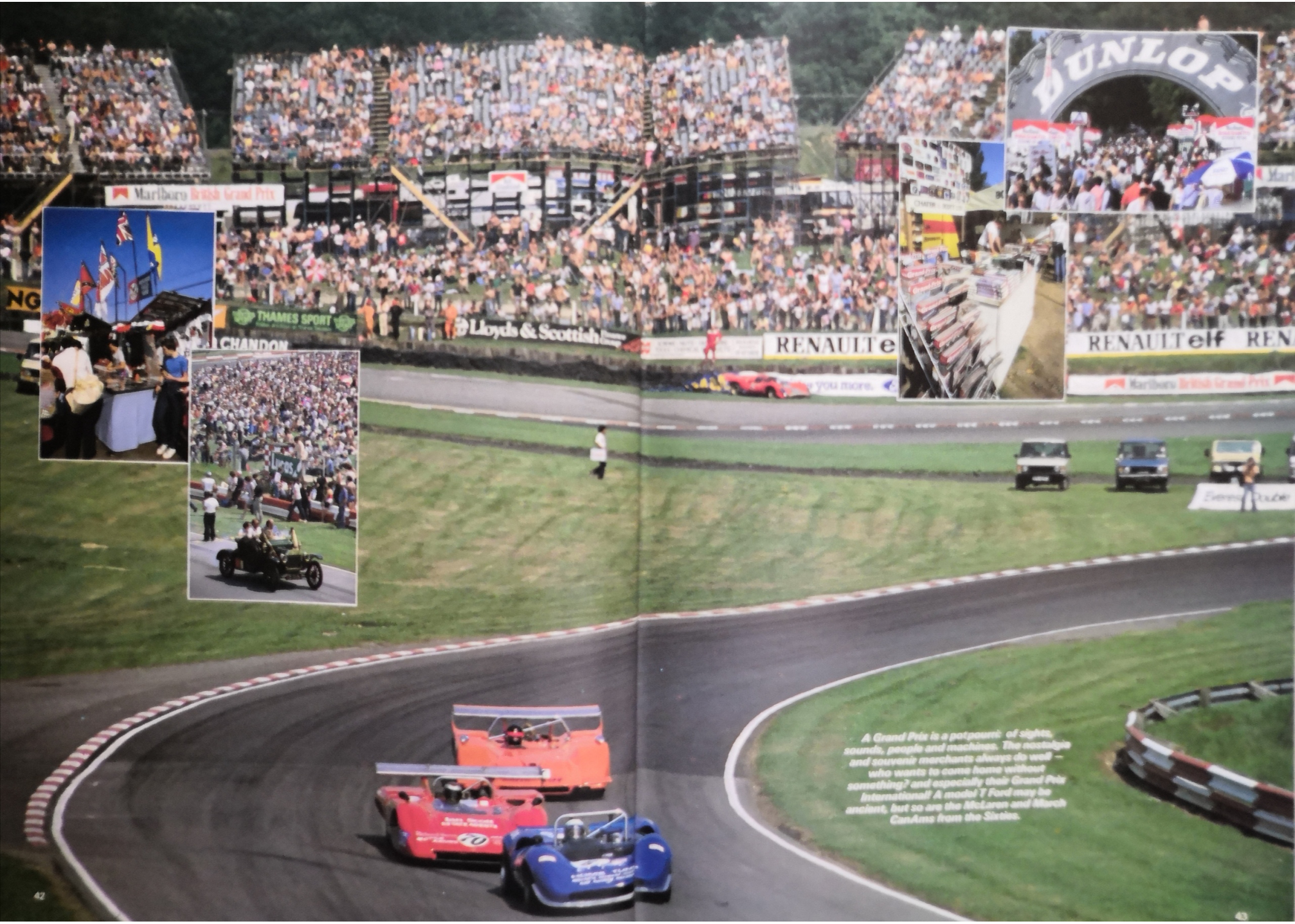
And Derek Bell's winner.



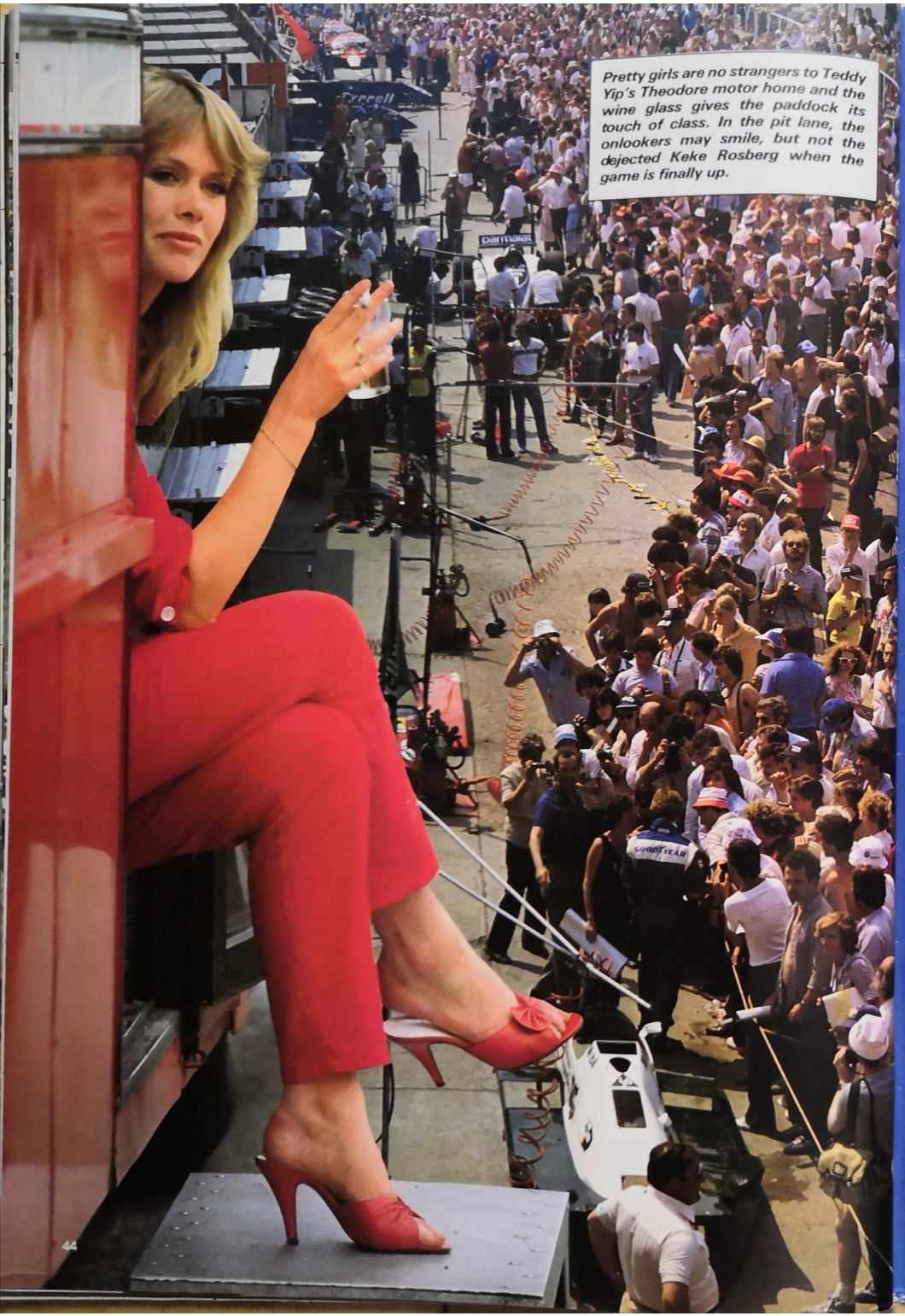
They come in all shapes and sizes, not to mention disguises.



Love, G.P.I.



A Grand Prix is a potpourri of sights, sounds, people and machines. The nostalgia and souvenir merchants always do well — who wants to come home without something? and especially their Grand Prix International! A model T Ford may be ancient, but so are the McLaren and March CanAms from the Sixties.



Pretty girls are no strangers to Teddy Yip's Theodore motor home and the wine glass gives the paddock its touch of class. In the pit lane, the onlookers may smile, but not the dejected Keke Rosberg when the game is finally up.

SILK CUT
THE MILD CIGARETTE
GALLAHER LIMITED
Enjoy the gentle pleasure of Silk Cut.
The international choice in mild cigarettes.
SDC1

In competition, a car that doesn't stop quickly is about as useful as a car that doesn't go quickly.

As a competition driver this was a fact that Vincenzo Lancia understood perfectly.

From the very beginning he insisted that the cars he made be fitted with the finest, most up to date braking system. Not surprising then that Lancia won nearly every motoring cup going.

'Ah,' do we hear you say? 'But Vincenzo Lancia passed on years ago. Do Lancias still live up to his name?'

In the last thirteen years Lancia has won the Monte Carlo Rally five times, the World Rally Championship thrice, the European Rally Championship and the World Championship for Makes twice, the Targa Florio, the RAC Rally, the Tour de France, and many more.

These rallies and races were won by cars like the Montecarlo, the Fulvia and the Stratos. But their showroom cousins have benefited from their experience.

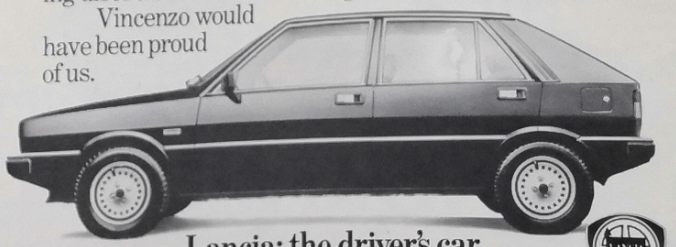
We developed a braking system that made us unstoppable.

The Delta, for instance, was Car of the Year 1980. It is uniquely luxurious for such a compact car, the level of equipment and trim is second to none. Over 100 mph is achieved by its 1500 cc overhead cam engine and its acceleration is equally outstanding.

The Delta has front wheel drive, all round independent suspension and rack and pinion steering, giving it the sort of handling that Lancia have always been famous for.

For the driver's security, the Delta has 'crumple zones' front and rear, a collapsible steering column and special padding on the fascia and other interior surfaces. And just so you won't need any of the safety features, we've given the Delta a super-efficient Duplex braking system, front floating discs and rear self-centring servo assisted drums.

Vincenzo would have been proud of us.



Lancia: the driver's car.

Lancia Delta £5429. Car featured with optional alloy wheels £179 extra. Automatic option £439. Prices and specifications correct at time of going to press and include seat belts, car tax and VAT, but exclude delivery and number plates. Performance data source Fiat SpA. The Delta carries a Cryla-Gard 6 year anti-corrosion warranty which covers all major parts and is subject to annual inspections by the dealer, paid for by the owner. For further details on Lancia contact Christopher Shelly, Lancia Marketing, PO Box 39, Windsor, Berkshire.

In competition, a car that doesn't stop quickly is about as useful as a car that doesn't go quickly.

As a competition driver this was a fact that Vincenzo Lancia understood perfectly.

From the very beginning he insisted that the cars he made be fitted with the finest, most up to date braking system. Not surprising then that Lancia won nearly every motoring cup going.

'Ah,' do we hear you say? 'But Vincenzo Lancia passed on years ago. Do Lancias still live up to his name?'

In the last thirteen years Lancia has won the Monte Carlo Rally five times, the World Rally Championship thrice, the European Rally Championship and the World Championship for Makes twice, the Targa Florio, the RAC Rally, the Tour de France, and many more.

These rallies and races were won by cars like the Montecarlo, the Fulvia and the Stratos. But their showroom cousins have benefited from their experience.

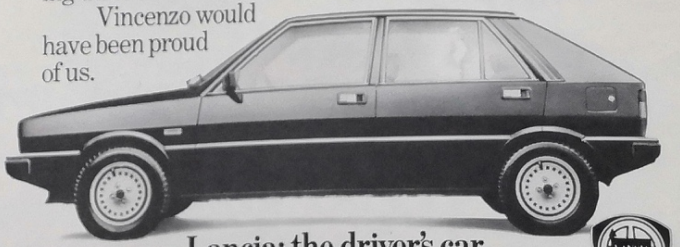
We developed a braking system that made us unstoppable.

The Delta, for instance, was Car of the Year 1980. It is uniquely luxurious for such a compact car, the level of equipment and trim is second to none. Over 100 mph is achieved by its 1500 cc overhead cam engine and its acceleration is equally outstanding.

The Delta has front wheel drive, all round independent suspension and rack and pinion steering, giving it the sort of handling that Lancia have always been famous for.

For the driver's security, the Delta has 'crumple zones' front and rear, a collapsible steering column and special padding on the fascia and other interior surfaces. And just so you won't need any of the safety features, we've given the Delta a super-efficient Duplex braking system, front floating discs and rear self-centring servo assisted drums.

Vincenzo would have been proud of us.



Lancia: the driver's car.

Lancia Delta £5429. Car featured with optional alloy wheels £179 extra. Automatic option £439. Prices and specifications correct at time of going to press and include seat belts, car tax and VAT, but exclude delivery and number plates. Performance data source Fiat SpA. The Delta carries a Cryla-Gard 6 year anti-corrosion warranty which covers all major parts and is subject to annual inspections by the dealer, paid for by the owner. For further details on Lancia contact Christopher Shelly, Lancia Marketing, PO Box 39, Windsor, Berkshire.

MISSING OUT!
Alone, uninformed and waiting. That's how you'd feel if you failed to get your copy of GRAND PRIX INTERNATIONAL on time - 5 days after the race. There are, however, two ways of preventing such a catastrophe from ever happening. The first is to place a regular order with your newsagent. The second is to take out an annual subscription and leave nothing to chance. For all new subscriptions received within the next month, GRAND PRIX INTERNATIONAL is holding the cost at * £ 15 (including post and packing) for 14 issues, make certain you don't feel left out, not knowing what is going on.
* U.K. subscriptions only. Note : overseas rates on application. Offer valid only until July 31 1982. All subscriptions received after August 1 1982 will be based on £ 1.25 per issue, plus any increase of postage costs by the Post Office.
SPECIAL SUBSCRIPTION OFFER
Grand·Prix
INTERNATIONAL
GRAND PRIX INTERNATIONAL
6 York Street London W1

NUMBER 1 IN FORMULA 1.

On the Grand Prix Formula One circuit, there is one motor oil that is dominant in dependable engine protection. Valvoline® Racing Motor Oil.

More Formula One teams use Valvoline than any other motor oil. Because Valvoline protects Grand Prix engines from the tremendous heat and friction of racing.

And, for everyday stop-and-go driving, Valvoline® Motor Oil protects your engine the same way it protects the most expensive racing engines in the world.

Valvoline Motor Oil

WINNING THE WORLD OVER SINCE 1866.

Tectyl

ONCE AGAIN OUR OIL GAVE EVERYONE THE SLIP.

Congratulations to Niki Lauda for winning the Grand Prix.

The Unipart Sponsored Marlboro McLaren International Formula One Racing Team just notched up its fourth Grand Prix victory.

Not bad going when you're not halfway through the season.

And whether it's been Niki Lauda or John Watson behind the wheel, it's been Unipart Super Multigrade in the engine.

Unipart's low viscosity gives extra protection to cars that drive at high speeds on the track. While its special formulation flows quicker during cold starts and protects against bearing wear and corrosion in cars that drive on the road.

Which is why Niki and John put exactly the same oil in the cars they drive to work as in the ones they drive after they get there.

Isn't it time you caught up with our oil?

UNIPART

The answer is yes. Now what's the question?

It's made many a boy scout into a master chef.

weber®
Barbecue Kettles.

Now it's easy to own the best in sport.

SEIKO QUARTZ SPORTS 100 WATCHES

Yours to wear now with interest-free credit from Walter Davies. From only £13.50 deposit, plus 8 equal monthly payments later.

HW014
£18.50 deposit
plus 8 equal monthly payments of £20.50.
Cash price £182.50.

Here's your special opportunity to own a superb Seiko Sports 100 – the watch that stands unsurpassed in the world of sport.

Shock and water resistant, Sports 100 watches are built with advanced Seiko technology to deliver dependable, accurate timekeeping, all the time.

They are designed to look the part too, with purposeful, elegant styling.

And now it's easy to own one from leading London jewellers Walter Davies & Sons, with interest-free credit terms.

From only £13.50 deposit, followed by eight equal monthly payments as shown.

Each model is water-resistant to 100 metres, and has scratch-resistant Hardlex glass.

Models HE022 and HW014 have gold-plated bezel and rivet features on stainless steel case-band. Day-date calendar with instant setting. Screw-down locking crown. HE022 is luminous too.

Model HV039 is a Duo Display Alarm Chronograph. With its versatile digital display as well as classic analogue face, it's a proper sporting all-rounder.

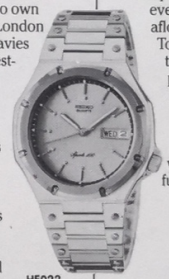
The alarm will rouse you for your morning run, remind you of squash court bookings and club meetings, and even mark the hours in long events.

The chronograph will time any event up to 60 minutes, reading to precisely 1/100th second. Individual lap times too. All much handier and lighter than a conventional stopwatch.

And the calendar display keeps you right up to date everywhere – on land, afloat... even under water.

To order, simply send the coupon with deposit as shown. Allow 28 days for delivery.

If not satisfied, for any reason, return your purchase within 2 weeks and we will refund your money in full.



HE022
£15 deposit
plus 8 equal monthly payments of £20. Cash price £175.

HV039
£13.50 deposit
plus 8 equal monthly payments of £14.50. Cash price £129.50.

ESPAÑA 82
SEIKO OFFICIAL TIMER

Walter Davies & Sons Ltd, 40 St Martin's Lane, London WC2N 4ER. Tel: 01-836 2500. Subject to availability. Offer open to UK residents only.

W Walter Davies & Sons Ltd,
Established 1763 — 40 St Martin's Lane, London WC2N 4ER.

Tick ☑ as required. Please send Seiko Sports 100 model(s) HE022 ☐ HW014 ☐ HV039 ☐

I enclose a cheque for £ _____ as deposit ☐ Charge deposit to my

Access ☐ Barclaycard ☐ American Express ☐ Diners Club ☐

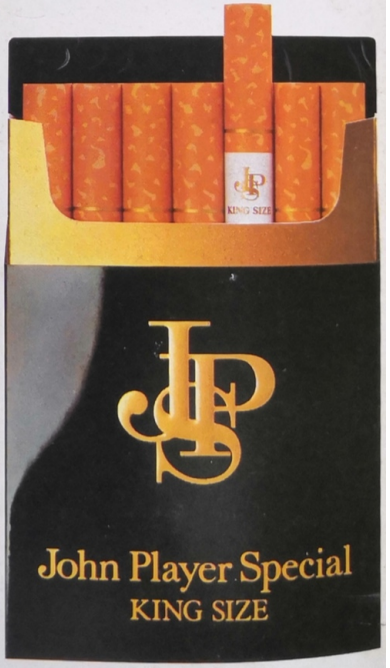
Account No. _____

Name (BLOCK CAPITALS) _____

Address _____

_____ GP1

Black Power



John Player Special King Size